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THE OLD BARN AT JORDANS, WHICH IT IS CLAIMED IS BUILT FROM TIMBERS OF THE MAYFLOWER

The Finding of the Mayflower

(By our Special Correspondent)

THE recent celebrations in this country at Plymouth and Norwich and at the same time across the Atlantic have brought the "Mayflower" before the public in England and America; and only last week a beautiful model in silver of the Pilgrim ship was on view at the Pilgrim's Room, in the Hotel Victoria, Northumberland Avenue, London, before it crossed the sea to be presented by a special mission to Mrs. Page, the wife of our late and much regretted American Ambassador. It may be mentioned here that this beautiful little model, a fine specimen of the silversmith's art, weighing 231 oz., was accurate in every detail, even to the method of tying the knots in the little silver ropes.

No better moment than the present could have been found by Dr. Rendel Harris for the publication of his work, produced by Longmans, Green & Company of London and New York, on "The Finding of the Mayflower," a work which I have already

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mentioned incidentally in my notes for THE AMERICAN ARCHITECT and which I consider of sufficient interest to claim this special notice. This is not to assert that Dr. Rendel Harris has established an absolute claim to the discovery of the timbers of this historic ship; in fact I do not imagine that that learned gentleman would go so far as to assert this for himself. What he has done, with very considerable critical acumen and careful research, is to bring together a number of facts, which point to the possibility of the original "Mayflower" having been used in the construction of the old barn which is known as Jordans Barn at Jordans, in Buckinghamshire; let us see now what are these facts, and how far they go to prove his contention.

The spot itself is in a way sacred to memories of religious efforts in England and America, for at Jordans is the Old Quaker Graveyard, near which the Friends had their meeting-house in the seventeenth century, and use at this day the old farm as a hostel or residence. Local tradition is said to connect the Jordans Barn with the "Mayflower"; and it was this fact, which came to his notice in a direct manner while attending a Quaker funeral, which first put Dr. Harris on the clue of his present research. The "Mayflower" sailed for Virginia in 1620, under Captain Christopher Jones of Harwich, and made land in New England. Christopher Jones died in 1622; and in 1624 the ship was appraised by the Admiralty; the document for this appraisement still exists, "The appraisement or valuacion of the shippe the 'Mayflower' of London and her tackle and furniture, taken and made by auctoritie of His Majestye's highe courte of Admiraltye the 26th day of May, 1624, at the instance of Robert Childe, John Moore and—Jones, relict of Christopher Jones deceased." The total price comes out at £128.8.4, which, says our author, must be the break up price, and indeed this seems certain from the Admiralty statement in the preceding Latin document, "eandem navem in ruinis esse." Mrs. Jones was, as stated, the widow of the Mayflower's captain, and Robert Child is stated to have resided near Jordans, the Childs being, as I believe, a very old Quaker family in England. Dr. Harris argues that the workmen who took her to pieces at Rotherhithe were employed at Jordans in her reconstruction; and that her "chief owner and final purchaser must have been somewhere in the Jordans area."

Here we come to a piece of evidence which is really significant and remarkable. Dr. Rendel Harris has had the Jordans Barn examined by a thoroughly qualified Thames shipbuilder and marine surveyor in April of the present year; and his evidence, very clearly stated is as follows: "The barn was built in my opinion more than two hundred years ago, and is constructed of old ships' beams and frames. These I find in beautiful preservation. The timber uprights that support the roof are bilge timbers of a schooner: the plate on which the building rests and the sill are of the same class of timber split through. These have the original tree nails and holes through which oak pegs were driven to fasten the timbers to the bottom planking of the vessel . . . I noticed that one of the sill timbers was part of the keelson of the vessel, as it still shows the marks of the side timbers to which this part was fastened. . . . The dimensions of the schooner I estimate according to the size of the timber as being about 90 feet long, 22 feet wide and 10 feet deep, and would carry about 150 tons. In conclusion, the construction is beautiful to the nautical eye, as the building, if it were possible to turn same upside down, would resemble a timber-built ship."

I have given this evidence in some detail, because it seems to me most important in this issue. The statement of the shipbuilder, Mr. Joseph Hyams, is clear and positive that the old barn was built of ship's timbers some two hundred years old, and the reader can easily verify his last remark by turning the illustration, which I hope will accompany this notice, upside down and seeing the timber hull of the schooner in its framework for himself. What is needed is to trace further the actual delivery of the broken up ship from Rotherhithe to the barn at Old Jordans; or, failing this, some definite link, either in the persons interested or the building itself, which would practically confirm that transaction. Dr. Rendel Harris endeavors to do this at some length in his chapters IX and X, under the headings "Who brought the ship to Jordans?" and "The Owners of Jordans Farm," and lastly on "The Fourth Owner of the Mayflower" (we have seen the names of the other three), whom he finds to have been a certain Gardiner, who was a connection of one of the appraisers named Crayford; but the argument is more ingenious than convincing.

What would settle the claim, almost beyond controversy, would be any authentic and indisputable fragment of the old "Mayflower" within the barn itself; and our author evidently hoped that this was forthcoming in some lettering just traceable on a cross-beam in the south wall. But the promising discovery soon took a form which had a perilous resemblance to the antiquarian efforts of Mr. Pickwick and his friends, "My photographer, being a man of quick vision, saw at once what I was after . . . and proceeded to show that the inscription contained the following letters, R.HARRIS, and was a prophecy of my own name. This was certainly something like the introduction of Bill Stumps to his autograph." The link which failed here may yet be traced in some other form; and when this comes the result will be welcomed by many on both sides of the

water. But till this happens all we have is the certain date of the appraisement and breaking up of the vessel, coinciding approximately with that of the old Jordans Barn; the interesting fact that this barn is shown on expert evidence to be formed of old ship's timbers, and the personal side of those concerned in the transaction, which cannot be considered conclusive.

ENTRANCE DETAIL—ALTERATION TO HOUSE ON EAST 19th STREET, NEW YORK
FREDERICK J. STERNER, *ARCHITECT*

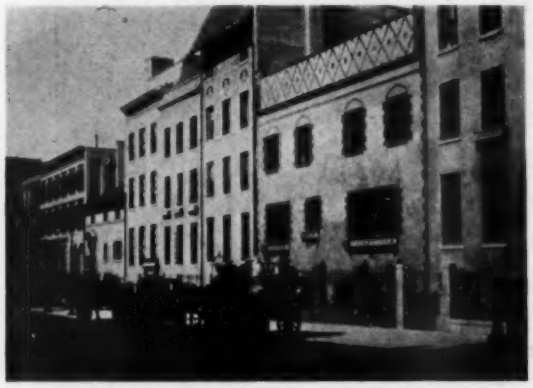
Converting Private Houses into Small Apartments

TWO elements have been at work in most large cities throughout the country and perhaps in New York City to a greater extent than any other, that either promote or retard relief in the present housing shortage. One element is the converting of lower stories of apartment houses into stores and offices, thus further reducing the available housing and accentuating the already acute situation, while the other has been the converting of a great number of high class residences in the best sections of the city—houses that heretofore have housed but one family—into small apartments of two or three rooms each.

There are in New York hundreds of houses of the "brownstone" type that have either remained unoccupied for the past several years or have proved a burden to their owners because of the excessive taxes and the low income available. The period of construction of such houses was not marked by the shortage of domestic servants that exists today. Neither was there the great number of high class apartments such as now attract the man of means. In New York during the last quarter of the 19th century it was the mark of an aristocrat to "live in a brownstone front." These houses were erected mostly in the '70s and '80s by speculators who often built block after block on both sides of a street. The poor quality of design exhibited and the inadaptability of brownstone (brown sandstone) for carving, gave an aspect of monotony that was seldom relieved by any considerable variety of facades.

These houses vary in width usually from 20 to 25

feet, although there are many as narrow as 18 feet and others as wide as 30 feet, the latter of the best type and not often built in adjacent numbers. The average house of this type consists of four stories and an "American basement," with either a high straight stoop or a box stoop. The average depth is about 60 feet with an addition, in most cases, extending about 20 feet into the yard at the rear. In the matter of planning little scope was afforded and because of their narrow width and their planning without courts, they necessarily depended for light and air solely upon the front and rear windows. The first two floors and basement usually contained two rooms, often with an alcove room on the first or parlor floor, and with hall rooms on the upper floors. A feature always met with on the bedroom floors is the dressing room between the front and rear bed rooms, provided with lavatory, closets and mirrors. On the top floor there were planned four or five rooms, the inner rooms lighted by a skylight from above. The bath rooms were placed in the rear extension or in the rear hall rooms.



ROW OF REMODELED BROWNSTONE HOUSES ON EAST 63d STREET, NEW YORK
FREDERICK J. STERNER, *ARCHITECT*

THE replanning of these houses to contain small apartments has called for considerable skill on the part of the architects. In many cases it has been necessary to retain the existing partitions, a fact that often complicated the replanning of the interior. In some cases the remodeling has involved merely the removing or addition of a few partitions. In others the interior has been completely torn apart and an entirely new plan made. Much ingenuity has been displayed in the development of the former dressing rooms into baths, closets, and kitchenettes. In 1919 the New York State Legislature passed laws amending the Tenement House Act so that houses of this type could be remodeled into housekeeping apartments. In many of these remodeling projects advantage has been taken of the provisions of this amendment and kitchen conveniences provided, usually in the form of kitchenettes. In others, of non-housekeeping types, a closet of generous proportions which has often come to be used as a kitchenette has been arranged in the plan. Such an arrangement is to be found in the Madison Avenue development and the 49th St. alteration, illustrated herewith.

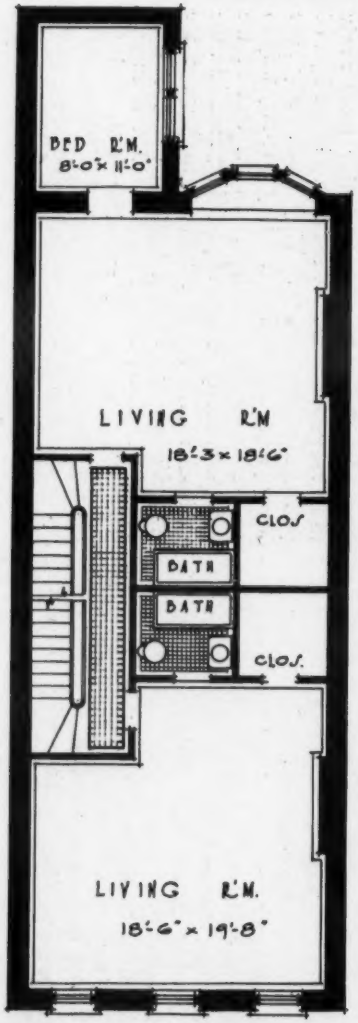
A feature of these remodeling schemes is the treatment of the rear extension which usually does not extend the full height of the building. In practically every case the bath rooms and butler's pantry formerly occupying the extension, have been altered into bed rooms and, where light and air is had from two sides, rooms thus planned become most desirable.

Typical of the 20-foot house alteration is the non-housekeeping type in the row of ten houses extending from 49th to 50th St. on Madison Ave., of which Adolph Mertin was the architect. These houses were of the usual 5-story type, with high stoops. In making the alterations the stoops were removed, the first and second floors converted into stores and the upper floors divided into apartments of two or three rooms and bath. In all of the apartments the bath room has been reduced in size to a minimum and is ventilated by either a duct or a narrow shaft.

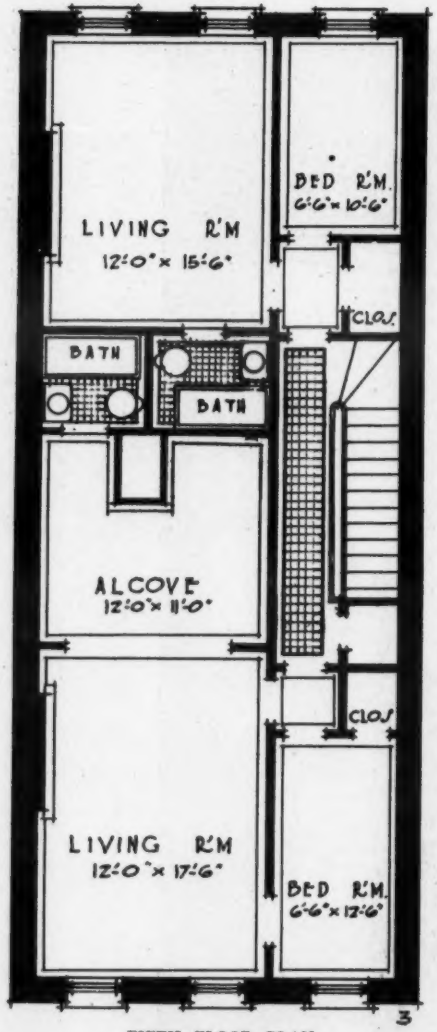
The alteration at 59 Gramercy Park, also the work of Mr. Mertin, is of the housekeeping type, some of the apartments being provided with kitchenettes of good size. This house is 72 feet deep and, with slight changes in the interior partitions, well arranged apartments were developed with large rooms and ample closets.

In the alterations on West 49th St. by Mr. Lippman, an addition in the rear and separated above the first floor from the main house by about twenty feet, gave room for two added apartments on each floor, each reached by a long hallway. This plan

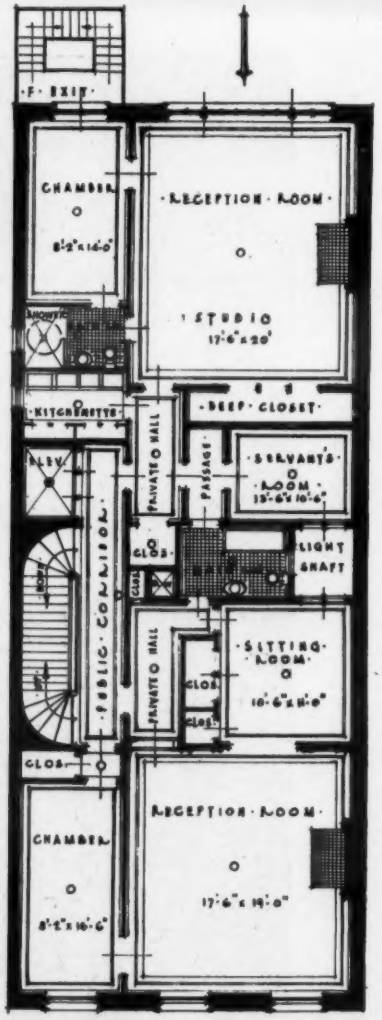
HOUSES ON MACDOUGAL STREET, NEW YORK
These three houses were erected before the Civil War. They have been remodeled and the exteriors painted red, green and yellow, respectively



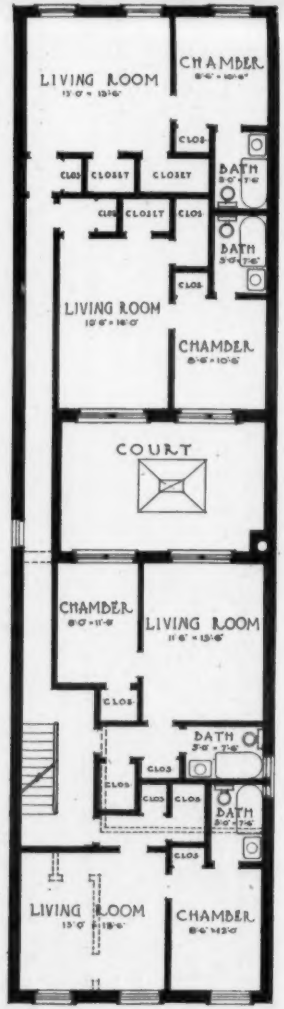
THIRD FLOOR PLAN
ALTERATION TO HOUSE, NO. 448 MADISON AVENUE, NEW YORK
ADOLPH MERTIN, *ARCHITECT*



FIFTH FLOOR PLAN
ALTERATION TO HOUSE, NO. 436 MADISON AVENUE, NEW YORK
ADOLPH MERTIN, *ARCHITECT*



THIRD FLOOR PLAN
ALTERATION TO HOUSE, NO. 59 GRAMERCY PARK N., NEW YORK
ADOLPH MERTIN, *ARCHITECT*



THIRD FLOOR PLAN
ALTERATION TO HOUSE, NO. 128 WEST 49th STREET, NEW YORK
HERBERT LIPPMAN, *ARCHITECT*

shows an ingenious arrangement of partitions, giving a well planned layout, particularly in the compact disposition of the baths and closets.

The interior finish of these remodeled apartments has not, as a rule, been executed elaborately, and there is a tendency toward simplicity in the new trim set in place. But in some cases the accessories have taken on the most luxurious form and there are instances of houses that before the war could have been rented for from $3,000 to $4,000 per year that are now eagerly sought at rentals of from $5,000 to $5,500 an apartment. In every case the financial elements have undoubtedly proven satisfactory to the owners because the increase of rents of reconstructed buildings has been very largely in excess of the cost of alteration figured on an ordinarily safe investment basis.

IN cases where these houses have been of the high or box stoop type, these stoops have been removed and an entrance from the sidewalk level designed to create a distinct character and redeem the houses from the monotony of the surroundings of similar facades. Many ingenious and artistic changes of the fronts of houses have been effected. These include not only the changes of window and door spaces, but in many cases brownstone fronts have been stuccoed and given various ranges of color which, with the addition of a properly selected paint for the window sash and cornice, have produced an effect that has very greatly added to the attractiveness of the architect's work out of doors. Two notable instances of such exterior treatment are seen in the 19th St. and 63d St. developments, both of which embrace a number of adjoining and adjacent houses. These were executed by Frederic Junius Sterner, architect.

A number of these remodeling projects are of the private-hotel type. In this type a suite is provided on the first (formerly the basement) floor for a housekeeper who provides restaurant facilities usually delivering meals to the tenants by means of a dumbwaiter, very often a feature of these private dwellings.

ROW OF REMODELED BROWNSTONE HOUSES ON EAST 19th STREET, NEW YORK
FREDERICK J. STERNER, *ARCHITECT*

The question arises as to whether these newly made apartments are to be considered in the light of permanent improvements. They undoubtedly have many points in their favor, chiefly that they help to relieve the housing shortage. In the face of the present difficulty in securing building materials, the utilization of existing structures to increase the available supply of living quarters is highly commendable. There can be no doubt that when new construction has caught up with the demand for housing, these remodeled houses will be supplemented by new structures based on the result of these altera-

tions embodying new features of planning and equipment not possible in the alteration of the private house. Many useful lessons in planning will have been learned and while the domestic atmosphere of city life may not be best served by such types, the fact that they have helped materially to tide over a great emergency will be a valid reason for their existance. Even with a comparatively short life in their new use, the high rental returns will probably prevent any financial loss. Looking forward to the period when new construction has once more reached its normal stage, these remodeled houses will still provide apartments for a certain class of residents who will prefer their compact "intime" atmosphere to that of the average new apartment.

Americanizing from the Start

ELLIS ISLAND was the scene recently of a ceremony new in its history. For months immigrants have been landing on Ellis at the rate of 5,000 a day. They come with dreams of a better land, a country of opportunity, peace, wealth and freedom from the war-born ills that still torture Europe. There is a whole pathetic volume of information about the conditions they leave behind them in the account of a riot that was caused by the sight of white sugar on the tables at Ellis Island.

The ecstacy with which they view for the first time the Statue of Liberty, a token of the realization of their dreams, can only be imagined by those who have known only the security and plenty of America. Then they are disembarked upon Ellis Island. Instead of the immediate freedom and generous reception they have expected, they find themselves in prison. The dingy stone buildings of the immigration bureau permit of no other description. There is confinement, examinations, the purpose of which is not understood, questionings and difficulties imposed before they are permitted to go ashore.

The rocky New England coast could not have been more forbidding to the Pilgrims. It must appear to the immigrant that the United States, far from welcoming, is setting traps to exclude him. On this occasion the situation was typical. Thousands of the new comers were locked up in the grimy buildings, wondering and anxious. Then Secretary Wilson of the Department of Labor paid a visit to the island. The immigrants were released from their cramped quarters and given the freedom of the lawns. A band was brought over from New York, an American flag raised, and the polyglot assembly stood while the "Star Spangled Banner" was played.

Secretary Wilson delivered an address, passed on by interpreters to all of the nationalities present, in which he explained that the ceremony was a greeting to them from the United States Government. He told that he himself had landed as an immigrant 40 years ago and there was a murmur of wonder as his hearers appreciated the fact of a rise from an immigrant boy to a high position in the government of the country. He assured them that in this country they would never suffer from militarism or autocracy, and cautioned them that freedom was not to be mistaken for license and that their liberty depended upon observance of the laws of the land. When he had finished, sandwiches and coffee, cigars and candy were distributed and the immigrants sang and talked in almost hysterical joy in the new assurance that their dreams had come true.

A wonderful thing, that simple greeting to a few thousands immigrants, and the sort of thing that should mark every day's reception of newcomers to America. Inestimable good may be expected of the recent efforts to dignify ceremonies of naturalization, but vastly greater is the accomplishment to be expected should the Government make a point of creating an initial impression of this sort upon all who come. Americanization can not begin too soon.

Pan-American Congress of Architects' Resolutions

THE first Pan-American Architectural Congress announced in these pages some months ago has now been held in Montevideo, Uruguay. Quoting in part from our previous account, it is proposed that the Congress shall be a permanent institution, which will meet every three years in the capital of some American nation. At each meeting there is to be an architectural exhibition. The aims of the organization are set forth as follows:

"To contribute to the development of architecture and to give a stimulus to the artistic and scientific studies connected with the profession; to strive toward a better understanding of all questions related to architecture, in the solving of which the nations of the Americas are interested; to promote, by all means within its power, the highest interests of architecture, and to create and maintain close relations of friendship and understanding between architectural institutions, associations and individual architects of the Americas."

The following resolutions were passed:

I.—City Improvements

1. That the Government and municipal authorities of all American countries should legislate in regard to the adoption of uniform plans for towns and cities, the present system of "squares" to be followed only in exceptional cases; the laying out of parks and gardens, and the choice of plants, shrubs, etc.; the selection of suitable sites for public buildings and monuments; and the framing of regulations complementary to the above.

2. That a special course of "city improvements" should be included in the curriculum of colleges and schools of architecture, and that free classes should be given by the architects' societies.

3. That leagues should be founded in every American city to arouse, direct, and stimulate Government initiative.

4. That a "Pan-American City League" should be founded.

II.—Building Materials

That the Governments of American countries should direct the attention of their institutes and state laboratories to improving the method of production and exportation of building materials peculiar to each country, and that the use of such material should be encouraged in every way. That an account of such investigations should be published by an international institute. That the architects' societies should form exhibitions of building materials and effect an interchange of such materials.

III.—Profession of Architect

That, in order to improve the aspect of towns and cities, to frame definite rules as to the conditions of dwelling houses which influence to so great an extent the people's moral and physical well-being, to insure the beauty, safety and hygiene of every kind of building, and generally to diffuse culture, the degree of architect must be recognized by the State, and the duties of the profession, which is the only one in a position to deal with the problems under discussion, established by law.

IV.—Cheap Dwelling-Houses

That the Government and Municipal Authorities should be encouraged to co-operate in the construction of dwelling houses that shall be both cheap and hygienic. That the construction of detached houses in the neighborhood of industrial and manufacturing centres should be encouraged, as also the erection of tenements in densely populated centres. That, before granting permission to build, the ground on which such houses are to be erected shall be supplied with drainage system, light and pavement. That the Municipalities and Departments concerned shall be required to modify the building regulations at present in force, adapting them to the economic needs of such buildings, in order to effect a saving in the execution of the works without leaving any thing undone pertaining to the hygiene, safety, and general aspect of such buildings. That attention should be drawn to the desirability of founding in each country a "National Bank for the building of cheap houses," to which employers, capitalists, and wealthy land-owners should contribute. That night-shelters for those unable to afford a cheap and decent lodging should be built.

V.—Public Culture

That to educate the public appreciation of architecture, exhibitions of applied arts should be held periodically. That the authorities should form museums of casts of the works of famous sculptors and architects, and that free access to public buildings and monuments should be granted. That a yearly prize for the best conceived and executed building should be awarded, and that lectures on the subject should be given in the primary and secondary schools of each country.

VI.—Professional Responsibility of the Architect

That the Governments of American countries should frame laws defining the responsibility of the architect, specifying clearly the responsibility of the architect and that of the contractor.

VII.—Architectural Training

That, for any progress to be made in the architecture of American countries, special Schools or Colleges of Architecture should be founded, in which the necessary artistic, technical, and scientific training would be given.

VIII.—"Pan-American Centre"

That a "Pan-American Centre" should be formed, and that an interchange of professors and students of architecture should be effected between the various schools and America, thus creating a real professional solidarity.

IX.—Building Activities

That the municipal authorities should be desired to study the modification of the system in force, with a view to increasing the tax on unoccupied sites. That all materials and machinery required for building purposes imported from abroad should be allowed to enter the country free of duty, and that the transport tariff should be revised in order to reduce freight rates. That the municipal authorities should be desired to modify the present regulations respecting the hygiene and safety of dwelling houses, with a view to transforming workmen's tenements into flats. That the public authorities should be urged to fight the trusts. That the training of competent workmen should be encouraged by the Government in their industrial schools, and that private concerns founded for the exploitation of any industry necessary to the building trade should be encouraged. That an improvement in the mortgage system should be studied, special mention being made of the system in force in the Argentine Mortgage Bank. That the laws of the country and the municipal regulations relative to building should be revised.

Dickens' Haunts to Be Pulled Down

A SEMI-CIRCULAR sweep of tall, dingy grey houses, the windows brightened in many cases with flower boxes, situated in Hampstead Road, London, and with a fine enclosed garden, boasting a magnificent avenue, comprising, in all, 4¼ acres of land, is shortly to be pulled down, and thus there will be severed another series of links with Dickens.

In one of the houses included in the area for sale, No. 263, Hampstead Road, Cruikshank lived. Here, states H. Johnson in the *Architects' Journal* of London, he drew the illustrations for "Oliver Twist." In an earlier period the same house was occupied by Clarkson Stanfield, the scenic artist, who was responsible for the scene painting connected with Dickens' few dramatic productions. Dickens frequently visited the house in the hey-dey of his popularity, and in doing so touched the fringe of the twilight quarter where his boyhood had been spent, for the whole neighborhood teems with Dickens associations, and characteristic stories of his circle.

In the same block, at the corner of Granby street, stands what remains of Wellington House Academy, which Dickens attended as a day-boy for about two years, subsequent to his period in the blacking factory. The Academy is today just as the novelist described it in "Household Words," in 1851, under the title of "Our School," presenting itself in a green stage of stucco profilewise to the road, like a forlorn flat-iron without a handle, standing on end."

Dickens students are practically unanimous that the Academy furnished Dickens with much of the material for Salem House in "David Copperfield," though he located it at Blackheath. Indeed, there was at the Academy, at the time Dickens was there, as testified to by his schoolfellows, a master who was a lover of the flute, and was, in many other particulars, the prototype of Mr. Mell. Prior to the visit yielding the article on the Academy which appeared in "Household Words," the actual schoolroom and the playground had been swallowed up by the railway. By the way, many, in trying to locate the school, have been led away by Dickens biographers to seek it in Mornington Place. Now, the portion of Hampstead Road in which both the school and Cruikshanks' house are situated was known at one time as Mornington Place. There has been a bit of juggling, and Mornington Place today is a short direct cut from Mornington Crescent to Mornington Road.

If you cross the main road from the Crescent you are in the drab regions of Somers Town, where Dickens first saw London intimately. Baynham Street, his first London home, is only about five minutes' walk from the Academy, though the actual house has gone, and on its site stands the out-patients' department of a hospital. Even nearer to the school is Johnson Street, where the house in which Dickens lived as a boy is marked by a tablet stating this fact. It is one of a uniform row of squat, depressing houses in a depressed locality. Just around the corner is the Polygon, where Skimpole lived. You may not discover there, today, "poor Spanish refugees walking about in cloaks, smoking little paper cigars," but you will probably find less picturesque aliens still hovering about the quarter.

House in Litchfield, Conn., Built in 1771

(See reproduction of the original drawing by O. R. Eggers in this issue.)

THE history of Litchfield is interwoven in the most interesting way with the early period of New England. It has been the home of many illustrious men and women and preserves today all the traditions that are so dear to the dwellers in these rural communities. Settled in 1720, it was during the Revolutionary War used as a base of supplies by the Continental Army. It was to Litchfield in 1776 that the statue of George III, which, on July 9, was thrown from its pedestal on the Bowling Green in New York, was sent. There it was cast into bullets by the women. Jurists, statesmen and writers of national fame have made their homes in this quaint New England village. All the traditions of good architecture and those elements of refinement that marked our Colonial period have been carefully preserved.

The house that Mr. Eggers has chosen as the subject of his sketch is exactly typical of many others that face the elm embowered roadways. Sitting close to the sidewalk these houses present a neighborly and a most human aspect. Their snow white walls are relieved by the green shutters while the noon-day sun casts the shadows of the branching boughs and the leaves of the trees that stand as sentinels.

Every aspect of this old house is one of refinement of the highest development of domesticity. One ceases to wonder that the New England states have from their very beginning sent to the service of the country in every important station sturdy men and women who, with sound minds in sound bodies, have labored to build up this country's greatness. Nor will any one be able successfully to disprove that long residence in a home so architecturally good will do naught but add to mental and moral development.

Such restoration as found necessary to keep this house in good repair and fit for occupancy has been skilfully and reverently conducted under the supervision of Aymar Embury II, architect.

HOUSE IN LITCHFIELD, CONN., BUILT IN 1771
THE AMERICAN ARCHITECT Series of Early American Architecture

XUM

EDITORIAL

The Building Trades Inquiry

IT is unfortunate that the Lockwood Housing Committee's investigation of the building trades has given to the public an erroneous impression of the builders who have been made the "victims" of the system's illegitimate and powerfully intrenched methods of graft. A feeling of sympathy has been established in the minds of most people for the builders who have been subjected to these tactics, partly because the average reader of a newspaper fails, for one reason or another, to analyze beyond the printed word, and partly because of the manner in which the proceedings have been reported from day to day in the daily press.

It is evident that no system of graft of this sort can exist unless the victim is a party to that graft; or unless he is in collusion with the system to the point of submitting to demands made upon him. Men of the stamp who operate this system can be properly handled by due course and process of law. There is little doubt in anyone's mind that any builder who had courageously and promptly submitted these proposals to a court would have easily come off the victor in such an encounter. Such action was not taken by some "victims," however. The reasons for that are many, chief among which is the possibility of tying up a given piece of construction work until the money lost in the delay would seriously affect the builder's profits. To the builder faced with such a problem, it is more feasible and effective—so far as the continuation of operations are concerned—to submit to the extortion and proceed unmolested with the work.

But such submission acknowledges timidity, and it is upon timidity that the system depends for its operations. And that lack of willingness to fight the matter out openly before the law places the builder or the contractor somewhat on the same scale as the grafter himself, in that it makes him a party to a bribe and in that it gives the man demanding that bribe added confidence in his ability to proceed with his unlawful work. The latter statement is the most serious part of the whole business. Give a man who indulges in unlawful practices reason to believe that he can safely carry out those practices, and he will proceed with them anew. Which, in this particular instance, meant simply that the system felt safe in approaching other prospects. It is the imposition of this handicap on builders and contractors that is the serious part of the thing, and it is this that the "newspaper public" seems to have overlooked.

THE investigation so far has been conducted by the Lockwood Committee, and Governor Smith has appointed the Attorney General as prosecutor. Now it is rumored that Washington intends to look officially into the matter. It is to be hoped that it will no become a political affair, and that it will be conducted in an unbiased manner.

The investigation has further developed the fact that the decent, conservative element of organized labor is not at all in sympathy with any system which jeopardizes its standing with the public. Evidence of this is seen, for example, in the complete repudiation of the system by the Brotherhood of Painters, Decorators and Paperhangers, in which men representing themselves to be skilled craftsmen were found to be merely common laborers holding a "privilege card" issued them by the system. This part of organized labor, as well as the public, has come to see the demoralizing influence of the system's tactics. It has lessened efficiency and daily output of highly paid workers, so that today there are a great many workmen no more efficient or productive than they were under the old wage scales. This is due to the demoralizing "protection" given incompetent workmen by the system. It has fostered an arrogant attitude on the part of "protected" members of unions, resulting in unjustifiable instances of arbitrary restrictions on a workman's daily output.

THE inquiry thus far has been valuable in bringing to the attention of both the public and the decent element of organized labor a lamentable condition. Effective continuation of the investigation on a fair and non-political basis will materially "clear the air" and reduce the possibility of a recurrence of such a condition. To conduct the inquiry effectively

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there must be no hesitation on the part of those involved to testify before the committee. There must be an exhaustive search for whatever contributory element may enter into the situation, regardless of the origin of those elements. There must be the willingness on the part of the system's "victims" to furnish all the facts at their disposal and to aid the committee in revealing further malpractices. There must be, above all, an appreciation by the layman and the professional man of the seriousness of the investigation; a real interest in everything which takes place during its course, and a genuine desire to help in any way possible toward a successful and thorough elimination of the unlawful system which has caused this deplorable condition of affairs.

What Is Art?

JUST what art is to the architect and engineer is a question that has been agitating the minds of a certain group of men who are debating it in the columns of an engineering journal. Someone has truthfully stated that art is the refinement of the commonplace. That definition will serve as well as any, for the reason that for many years men have striven tersely to define art and none has really succeeded.

Fortuny, a master draftsman and colorist, painted "The Choice of the Model" and also "A Scene in an Abattoir." At one time during an exhibition of Fortuny's work in New York, these two pictures hung almost side by side—the one, a beautiful interior with all the sumptuousness of wealth and refinement, the other the loathsomeness of an abattoir of more than fifty years ago. Competent critics agree that both pictures are great works of art.

Now, if art is the creation of only that which is beautiful, wherein lay the appeal of the abattoir picture, and how was it possible to claim for it the attributes of a work of art? Was it not because it represented in the highest degree a masterly refinement of a commonplace, almost loathsome subject?

In citing this illustration it is not meant to place before the reader two extremes of art as representing the arts of the architect and of the engineer, but to show if it may be done, that any matter to which men skilled in their professions direct all the power of their mentality, may be redeemed from the commonplace and stand created as a work of art.

A FACT that is responsible for diversity of opinion between architects and engineers as to this matter of art is that each has so closely specialized in the art of his own profession that he is not equipped fully to appreciate all the art of the other. Engineers have claimed that architects have by injudicious ornament marred the engineering beauties of their work, and architects loudly assert that engineers have built an ugly, inartistic structure. Unfortunately in many instances both contentions are correct.

The reason why these things have occurred is that in the specific cases, neither the architect nor the engineer has been sufficiently well informed as to just what art really is. If the proper proportioning and relation of solids to voids is the basis of good architecture, and a building so constructed, even if absolutely devoid of ornament, may be as worthy of approval as the most complexly designed structure, it will not be necessary to set down any instances of the work entirely done by engineers that are the masterpieces of the world. The art of the engineer is more nearly the refinement of the commonplace than is that of the architect.

As the profession of architecture slowly but surely nears the true intent of its practice, it will more certainly be able to regard with less irritation the work of engineering that its creators regard as one of art. And in like manner will the engineer become more kindly disposed toward the attempts of architects to supply to every building with which they are connected such beauty of design as will eliminate the suggestion of the commonplace. When these two professions have traveled along these two roads, they will in the future find that they have joined and that both professions will be then traveling a common path and one that will lead to the most wonderful achievement.

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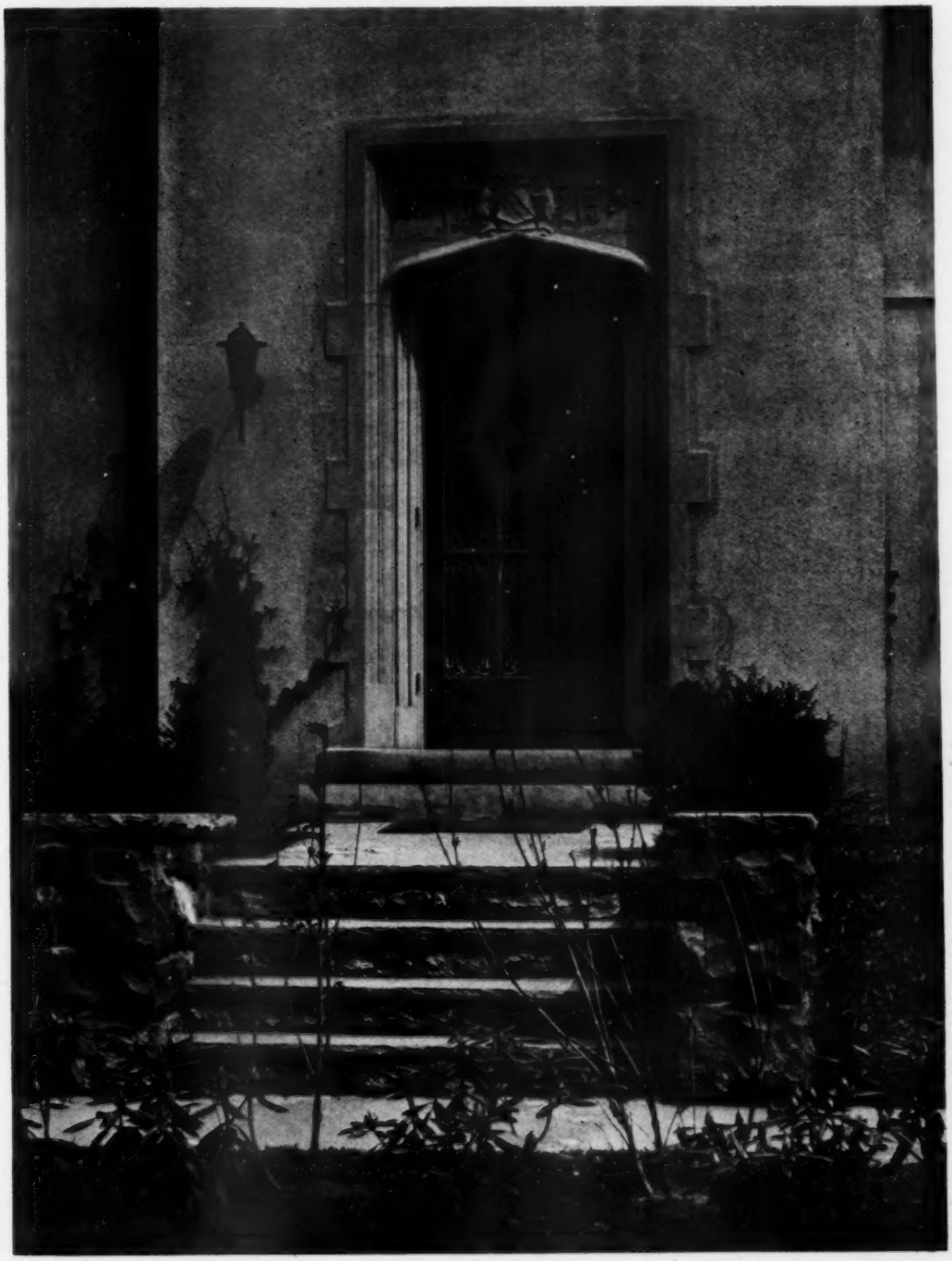

MAIN ENTRANCE DETAIL.
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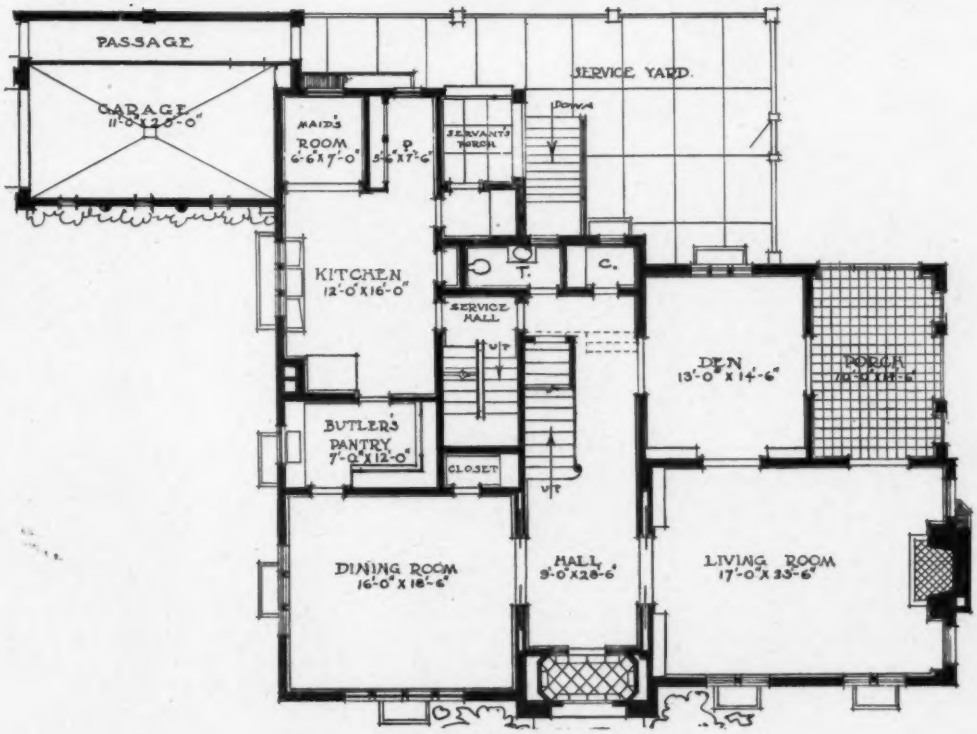
LIVING ROOM



FIRST FLOOR PLAN

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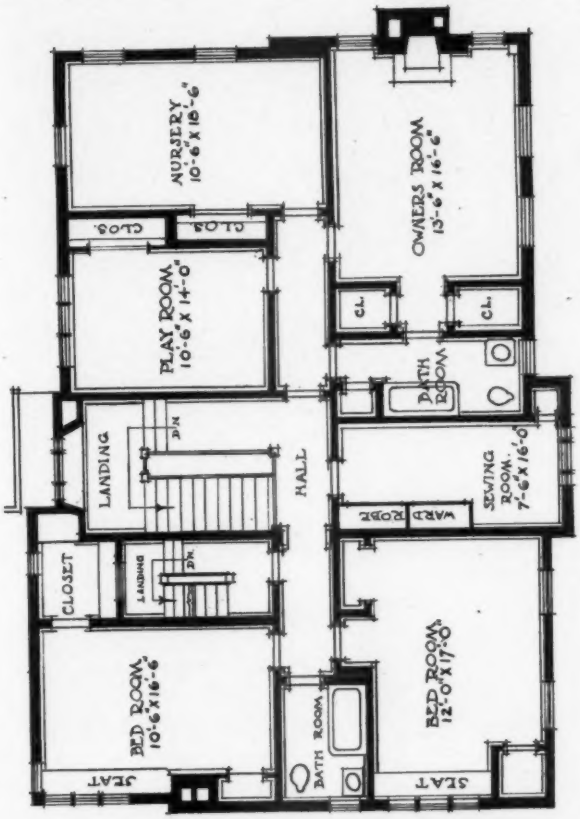

HALL AND SECOND FLOOR PLAN

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VIEW SHOWING GARAGE

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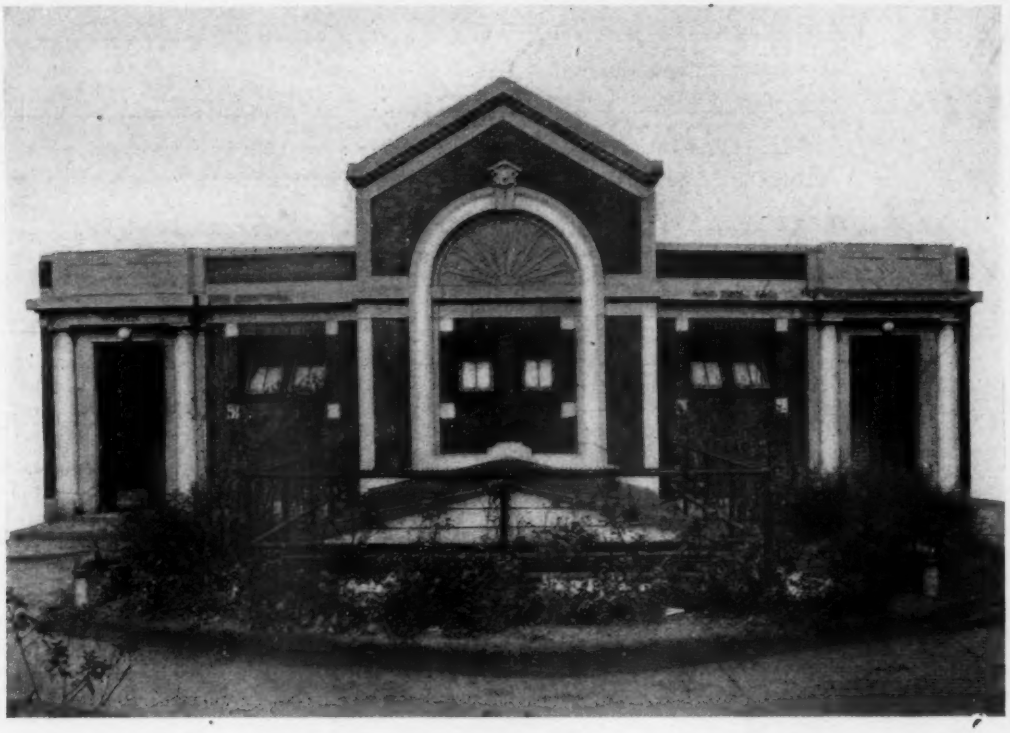

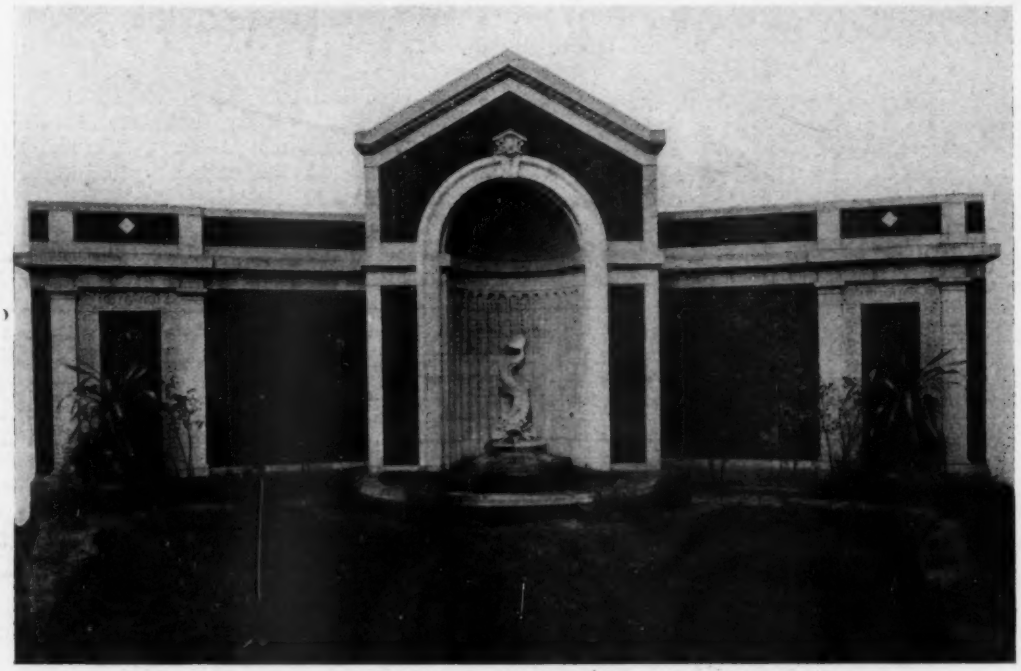

PUBLIC COMFORT STATION, CAPITAL SQUARE, DETROIT, MICH.
VAN LEYEN, SCHILLING & KEOGH, *ARCHITECTS*

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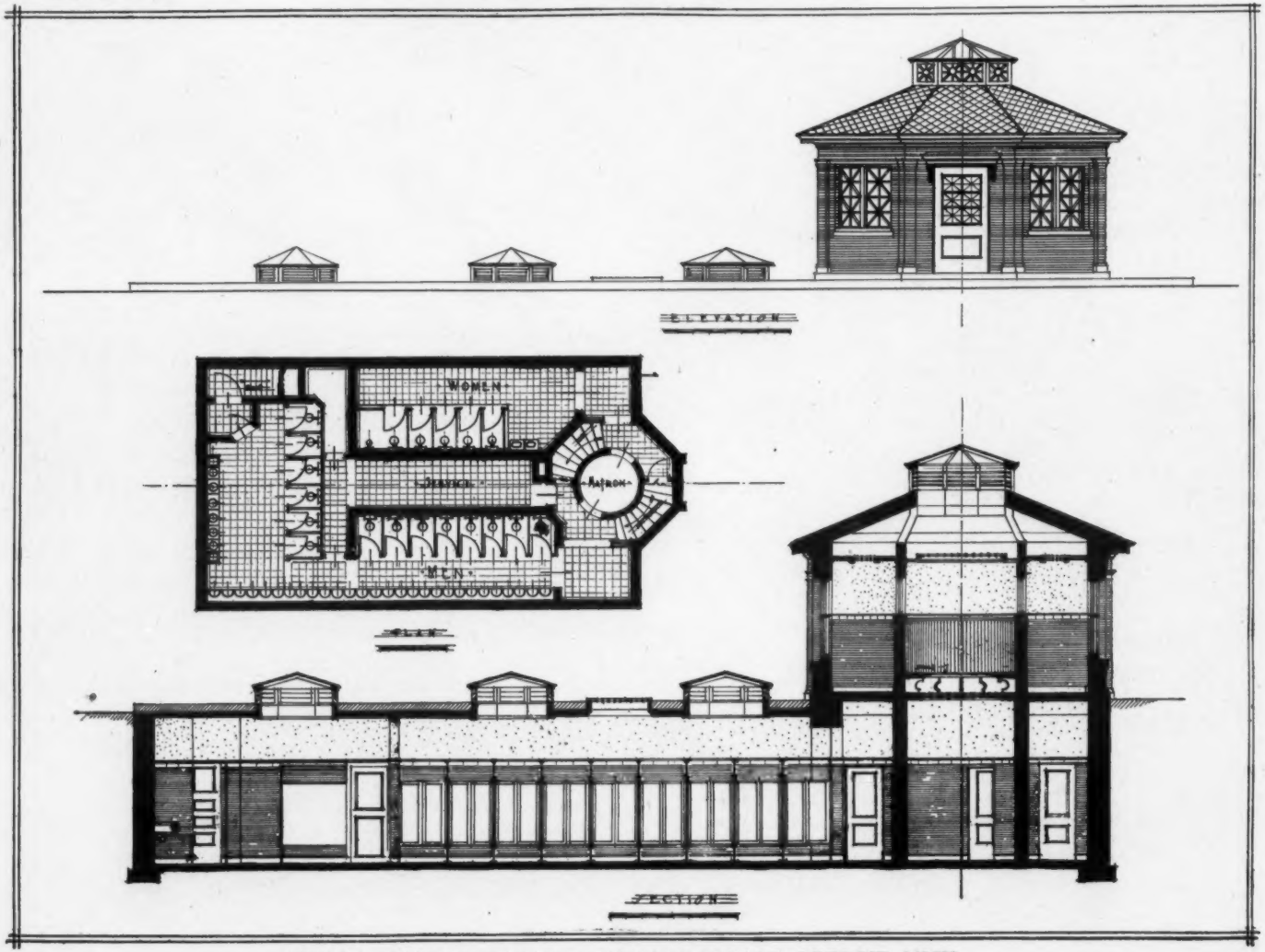
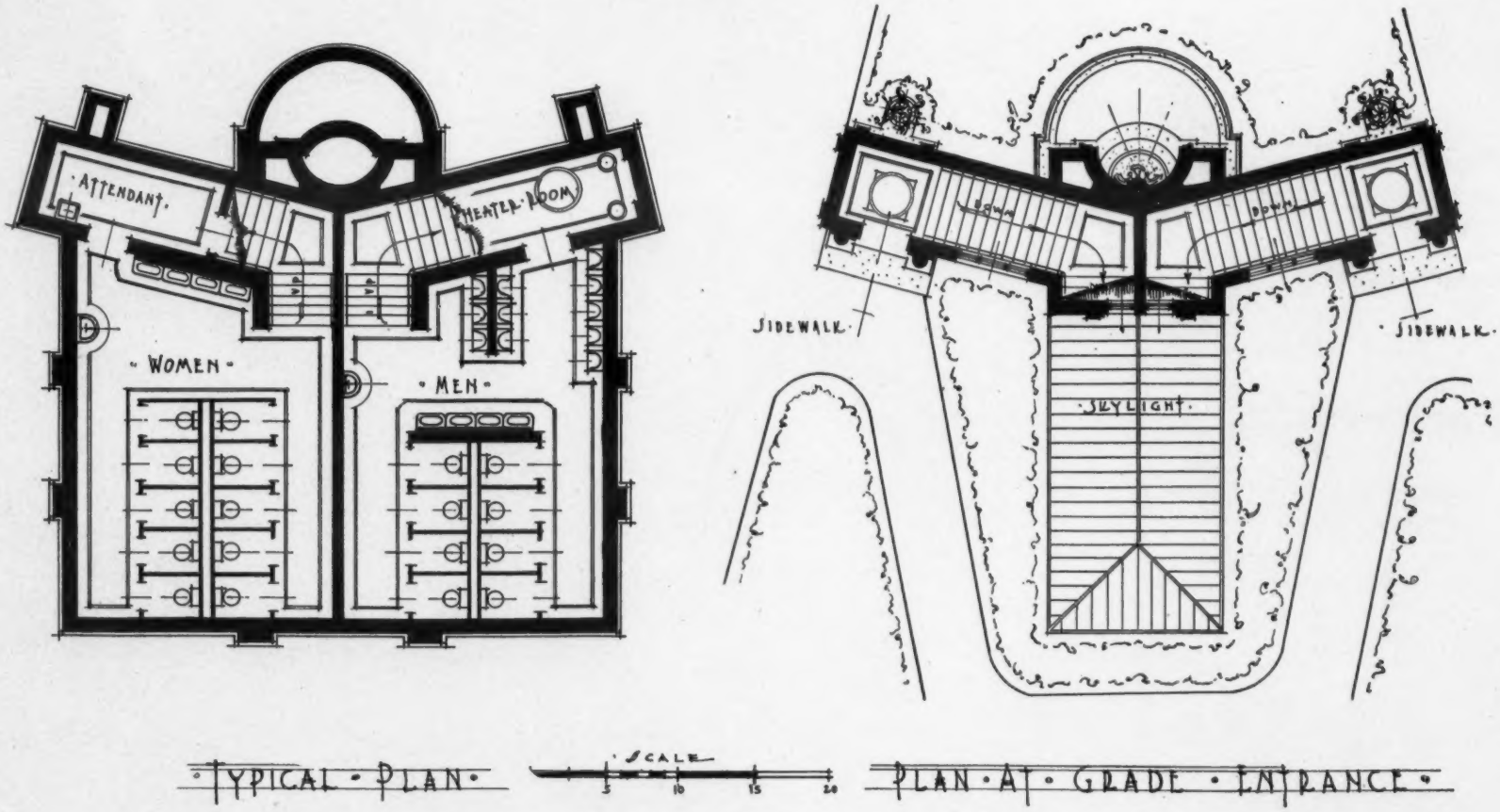
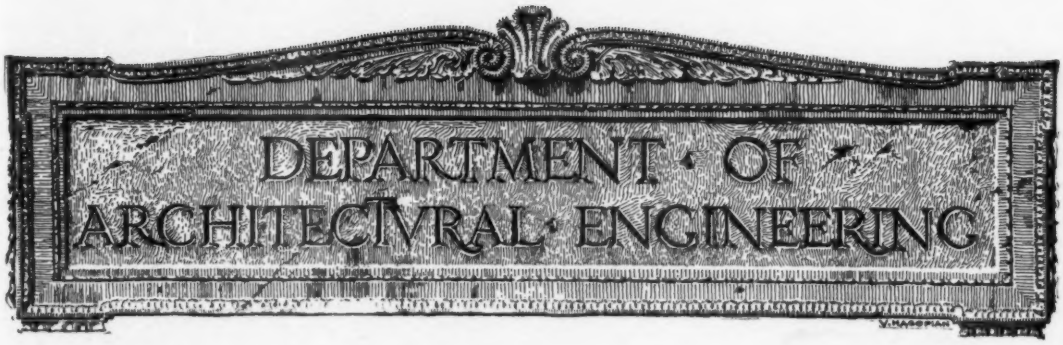


PUBLIC COMFORT STATION, CADILLAC SQUARE, DETROIT, MICH.

VAN LEYEN, SCHILLING & KEOGH, *ARCHITECTS*

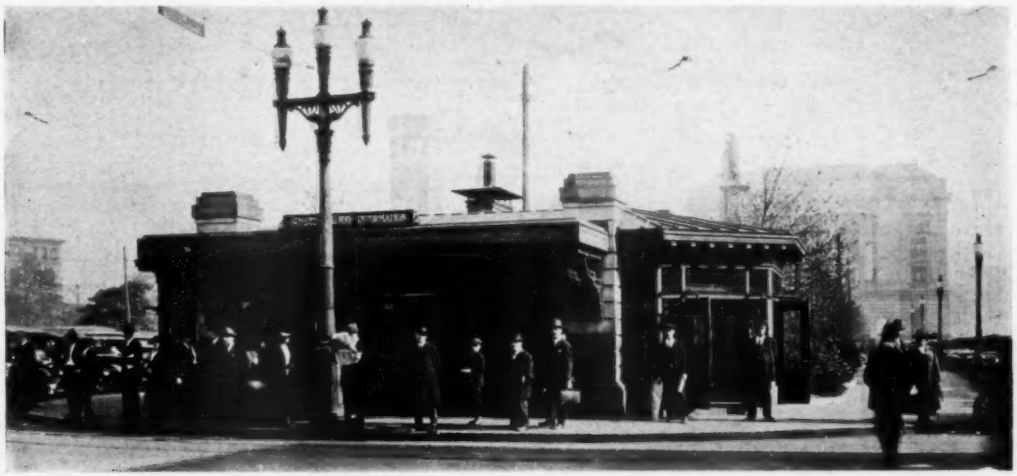


PUBLIC COMFORT STATION, CAPITAL SQUARE, DETROIT, MICH.
VAN LEYEN, SCHILLING & KEOGH, *ARCHITECTS*



The Ventilation of Public Comfort Stations

AN efficient ventilation system is essential to the sanitary operation and maintenance of the public comfort station. The removal of objectional odors and vitiated air must not be left to chance, nor to an arrangement arrived at by guess work. In order to accomplish this purpose, it is necessary to provide a system of ducts and fans, and that these may be properly housed, the ventilation system should be designed simultaneously with the development of the architectural layout. Due to the lack of proper provision in the original plans, some ventilating systems have been more or less of makeshift character, and therefore have rendered less efficient service than would have been the case had proper consideration to the subject been given in the first instance.



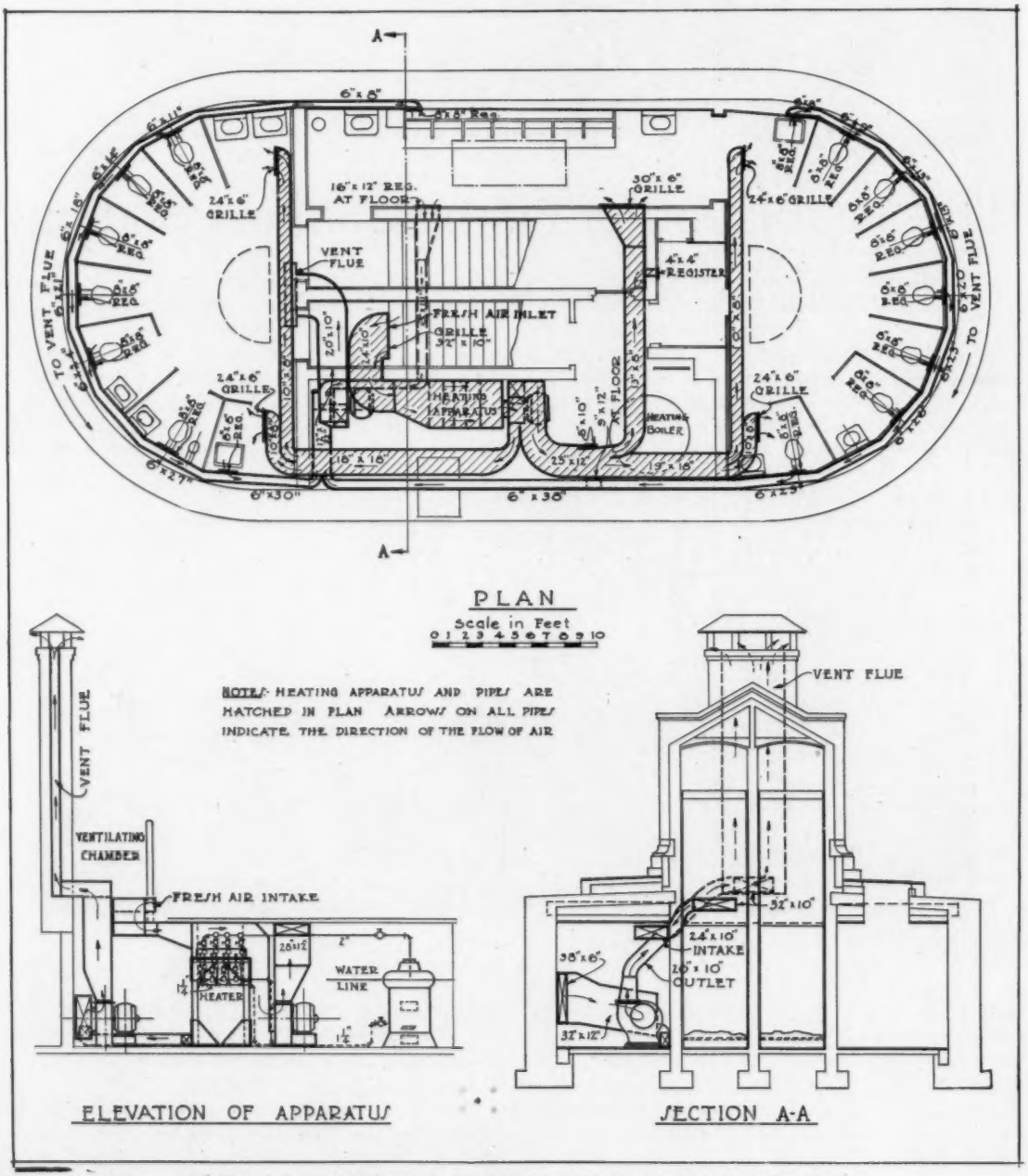
ENTRANCE TO COMFORT STATION, PROVIDENCE, R. I.
MARTIN & HALL, *ARCHITECTS*

In order definitely to control the air flow both a positive exhaust and a positive supply system should be installed. However, if, due to the necessity of practising economy, but a single system is permissible, the exhaust system should be installed. The adjacent outside air will always be of a purer quality than that inside, and by providing an adequate exhaust system, thus continuously emptying the interior of its foul air, fresh air from without will find its way in through the doors. These should then contain louvres to provide for intake when the doors are closed, since the incoming fresh air must equal in volume that displaced by the exhaust fan.

It might be thought by one unfamiliar with air conditioning that the design of such a system of ventilation is most simple, and requires but little thought —just an exhaust fan placed in a convenient place with necessary driving motor, the fresh air to find

its way in somehow. This, however, is not so. The feature which is as necessary as a proper volume of fresh air is good circulation. Those who are familiar with flying know what "air pockets" are. Air plays strange pranks. It is quite possible to pump so much fresh air into a given space per minute and exhaust a similar volume, and yet find pockets in which the air remains unmoved, despite the fact that a considerable air change is constantly occurring. These stagnant places must be prevented by proper arrangement of ducts and registers.

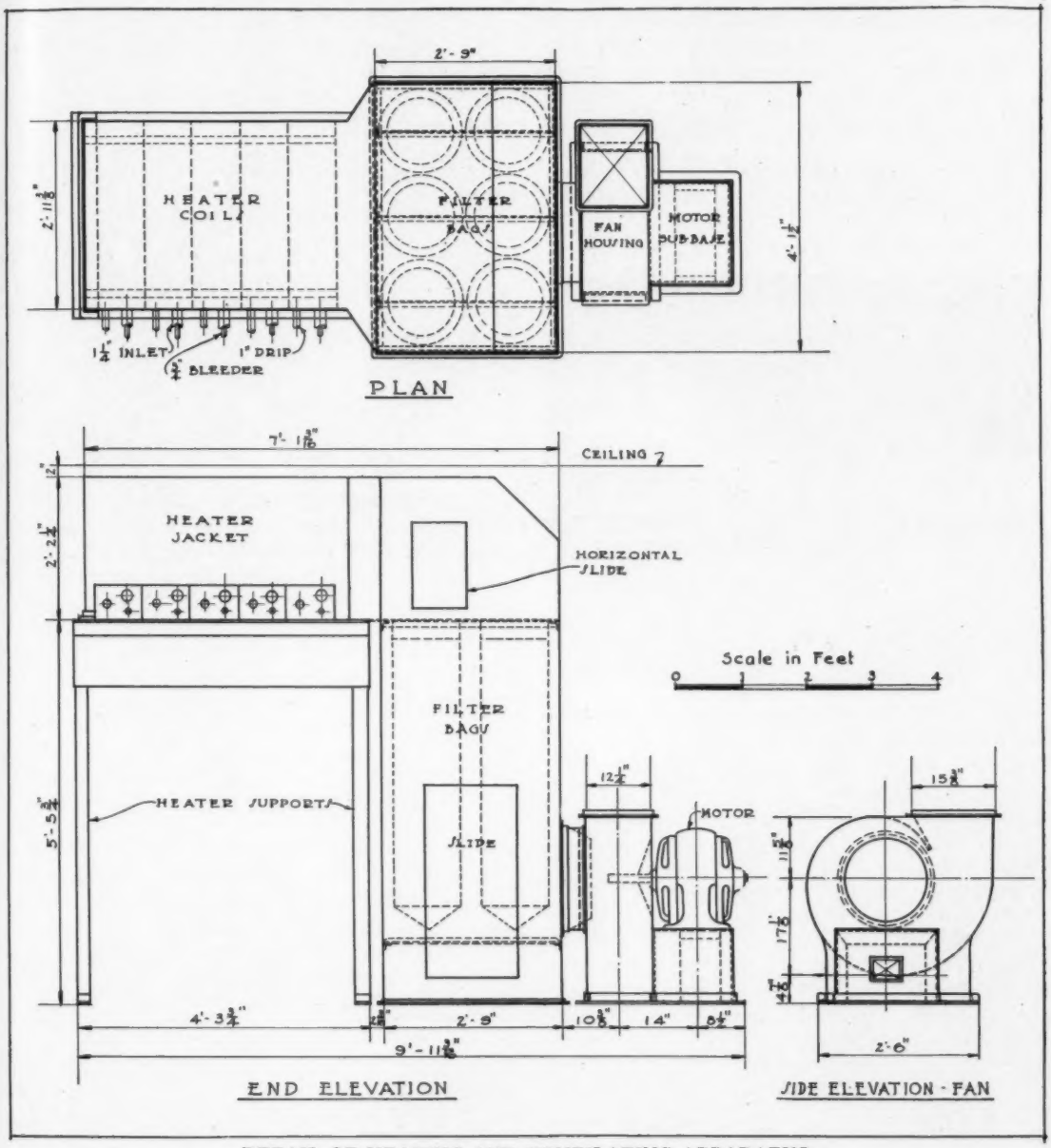
At present it is considered good practice to leave



PLAN AND SECTIONS OF COMFORT STATION, PROVIDENCE, R. I.
MARTIN & HALL, *ARCHITECTS*

a space in back of the plumbing fixtures, thus providing for an air duct of the exhaust system.

During cold weather it is customary to furnish heat in such buildings, and the heating plant can be readily combined with the ventilation system. The fresh air may be drawn through a grillwork over the stairway and tempered by drawing it through a heating chamber containing steam coils, before it is discharged into the various rooms of the comfort station through properly sized ducts and registers. A positive supply must, of course, be provided by an intake fan for such a combined system. Since considerable dust is liable to collect around the location of the intake, it is better to filter the air. This can be accomplished by the use of dust bag filters.



DETAIL OF HEATING AND VENTILATING APPARATUS

The foul air should be exhausted from near the floor level. The heated fresh air naturally rises, and as it cools, falls, thus reaching a lower strata, and

as it becomes vitiated is drawn through the exhaust registers. If these registers were placed near the ceiling, they would tend to draw out the fresh warm air, leaving a lower strata of stagnant foul air with no outlet.

The exhaust fans now most generally employed are of the centrifugal multivane type, and should be connected directly to the motor where this is possible. Special heating coils or radiators for hot blast heating are on the market, and are most efficient for this purpose.

The accompanying illustrations show the ventilating system installed in a comfort station at Providence, R. I., designed by Martin & Hall, architects. The ventilating equipment was furnished by B. F.

INTERIOR OF PROVIDENCE COMFORT STATION

Sturtevant Company. A careful study of this arrangement will be found helpful in solving similar problems. Both positive exhaust and supply systems are installed, the latter operating in combination with the heating system. The intake grille is 32 in. by 10 in. connected to a 24 in. by 10 in. duct which leads direct to the chamber housing the steam coils, which consist of 125 sq. ft. of 1 in. pipe. The construction of this part of the apparatus is shown to a larger scale, with overall dimensions. From the heating chamber the heated air is forced by the supply fan, driven by a 1¼ h. p. motor, into a 25 in. by 12 in. duct to the right and an 18 in. by 8 in. duct to the left. The former has three branches supplying fresh air at different points in the men's compartments, while the latter has two branches supplying the women's compartment. The steam boiler is located in back of the stairs. Of course, during warm weather when the heating plant is inoperative, the supply system may operate supplying air at the normal outside temperature, or the exhaust system only may be used, in which case fresh air must find its way in through the doorways.

It will be noted that all registers for the supply system are located 7 ft. above the floor level, while those of the exhaust system are close to the floor.

Two semi-circular exhaust ducts located near the floor level, increasing from 6 in. by 8 in. to 6 in. by 30 in. in section, run in back of the water closet fixtures of both men's and women's compartments with a register in back of each fixture. These join in a 12 in. by 32 in. main duct which leads to the exhaust fan, this in turn forcing the vitiated air into a 10 in. by 20 in. horizontal duct and then up a vertical vent flue, this latter discharging to the outer air approximately 16 ft. above the street level.

It will thus be seen that a system such as that illustrated provides a very thorough air change, as well as a constant supply of fresh air.

Air ducts of circular cross-section are found to be the most efficient, but since ventilating ducts must be placed so as to occupy as little space as possible, or cut down the head room by a minimum amount, circular ducts are usually impractical, and such sizes as 6 in. by 30 in. or 10 in. by 20 in., etc., must be resorted to, to be accommodated in given spaces.

Mazout Successfully Used as Fuel

One means of solving the coal problem as applied to transportation in France has been evolved by the Orleans Railway. This company proposes in the near future to run no fewer than 400 heavy locomotives with *mazout,* a residue of petrol, the production of which is being pushed. Experiments with this fuel have been most succesful and trains drawn by engines adapted to its use are made easily to attain a speed of 60 miles an hour.

The company recently inaugurated this type of locomotive with an express train from Paris to Tours, and this section is now being served regularly by means of such locomotives, drawing both passenger and freight trains. It is estimated that the 400 locomotives which the Orleans system is to employ will consume 300,000 tons of mazout annually. On the same line freight trains of 1,200 tons, drawn by powerful engines, have for some time been running regularly on mazout between Paris and Tours.

Trade Publications Wanted

Valparaiso University has recently reopened a complete course in architectural engineering. Trade publications applicable to this course will be gladly received and will become part of a file used to give the student first hand information of various materials.

Those publications giving manufacturers' specifications and methods of application will be especially welcome. Address Wilson Carleton, Professor in charge of department, Valparaiso, Indiana.

XUM

Idiosyncrasies of Building Materials—Lime

COMMERCIAL lime, used extensively in the building industry, is produced from limestone, one of our commonest rocks. In the process of manufacture the limestone is quarried, broken into sizes convenient for handling, and burned in a kiln.

Composition.—Since the composition of different deposits of limestone varies, so, also, does the resulting lime. Limestone is calcium carbonate, but is never found pure. The impurities generally present are magnesia, iron, alumina (clay) and silica.

Very pure crystallized limestone is known as calcite. As the content of magnesia increases, the stone is called magnesian limestone until the ratio of calcium carbonate to magnesium carbonate becomes 100 to 84, when the name is changed to dolomite. If the magnesia content remains low, but the other impurities increase, the rock is known as argillaceous (clayey) limestone, natural cement rock (with suitable clay content for cement manufacture), and calcareous shale.

The heat applied in the kiln breaks up the compounds of calcium and magnesium carbonates, the carbon dioxide being driven off as gas. Thus lime is merely limestone from which the carbon dioxide has been removed by heat. This, then, must constitute a definition of lime.

Classification.—The wide variation in the chemical and physical properties of limestone necessitates a similarly great difference in the kinds of lime. Therefore, some system of classification becomes necessary. That adopted by the American Society for Testing Materials is as follows.

High calcium.—Not less than 90 per cent. calcium oxide.

Calcium.—Not less than 85 per cent nor more than 90 per cent. calcium oxide.

Magnesian.—Not less than 10 per cent. nor more than 25 per cent. magnesium oxide.

High magnesian.—Not less than 25 per cent. magnesium oxide.

The total amount of impurities (exclusive of carbon dioxide) shall not be more than 5 per cent. in selected lime, or 7½ per cent. in run-of-kiln lime.

Slaking and Setting.—When water is added to lime it slakes, that is, enters into chemical combination with the water. This reaction generates heat and is accompanied by an increase in volume. Slaked lime, when exposed to air, will set. The setting of lime is caused, first, by the evaporation of excess water, and finally by the absorption of carbon dioxide, causing the lime to revert into calcium carbonate. Therefore, setting will take place more rapidly if the amount of carbon dioxide in the air is increased, as, for example, by the use of salamanders. Setting is always accompanied by a decrease in volume, or shrinking.

Quicklime.—Lime is put on the market as either lump or ground lime. Lump lime is shipped in bulk or in wooden barrels holding 180 or 280 pounds net. Ground lime is lump lime which has been ground and screened, generally through 60-mesh. It is shipped in air-tight iron casks.

Hydrated Lime.—Hydrated lime is prepared by adding to quicklime just sufficient water to insure complete slaking, and under such conditions that the heat generated will evaporate all the excess water, leaving the product dry. Since slaking is accompanied by an increase in volume, the lumps of lime fall into powder during the process. Any impurities in the lime will not slake, will not fall into powder, and consequently any large particles of them can be removed from the finished product by screening.

Hydrated lime is a fine, dry powder, consisting essentially of calcium hydrate and magnesium oxide, for it is generally conceded that the magnesia does not slake during the ordinary process of manufacture. The quantity of water contained varies from 24.3 per cent. for pure high-calcium hydrate to 11.3 per cent. for impure dolomitic hydrate. The proportion of impurities is generally less than that in the lime from which it was made.

In building operations hydrated lime may be used for any purpose in place of lump lime, with precisely similar results. The consumer must pay the freight on a large amount of water, but the time and labor required for slaking lime is eliminated, and there is no danger of spoiling it either by burning or by incomplete slaking.

Hydrated lime will keep better than lump lime, because the powder packs together into a dense mass, rendering the penetration of carbon dioxide very difficult. It can be stored with absolutely no danger of fire.

Hydrated lime is put on the market in paper sacks of 50 pounds each. The Urschel-Bates valve bag is used almost universally. There are many varieties of hydrated lime, depending on the fineness of the grain. It can be obtained screened through any mesh from 10 to 200.

To prepare hydrated lime for use the mere addition of water is all that is necessary. It is a rather difficult powder to wet, however, so that it is advisable to let the hydrated lime and water stand for 24 hours before using. Or it can be used immediately

*Much of the data here presented is from a recently issued circular of the Bureau of Standards entitled "Lime, Its Properties and Uses."

XUM

if the hydrated lime is added to the water, rather than water to the hydrated lime.

Mortar.—By far the greatest use of lime is as a mortar for building purposes. Whether a dolomite or a high calcium lime is best suited for this purpose has long been an important question for both lime manufacturers and builders. In considering this question the points of difference between the two limes should be noted.

A high-calcium lime slakes quickly and generates a large amount of heat, hence it is apt to burn if it is not watched carefully. A magnesian lime slakes slowly, generates comparatively little heat, and is never in danger of burning. A high-calcium lime increases in volume much more than a magnesian lime, and requires more water, both for the hydration and the formation of a paste. Magnesian mortars generally work smoothly and freely under the trowel, while high-calcium mortars are apt to be sticky and work "short." When laid in the wall, both limes set by absorbing carbon dioxide from the air. During this process a high-calcium lime shrinks noticeably, while the change of volume in a magnesian lime is much less. It must be borne in mind that the above properties are subject to radical modifications, due to different porosities of the stones or to different conditions of burning.

The usefulness of lime as a bonding agent probably depends more on the method in which it is handled than on its content of magnesium. Aside from the larger cities, where machine-mixed mortar can be had, the slaking of lime is generally left to unskilled labor. In such cases the kind of lime to be used is the kind the laborer is accustomed to handle. Thus a laborer used to high-calcium lime will probably not be able to get good results with a dolomite lime, and vice versa. Moreover, a high-calcium lime will give a much larger volume of putty than a magnesian lime, hence the laborer is deceived into adding an extra quantity of sand. However, this is not an unmixed evil, for the sand improves the spreading qualities of the mortar and lessens shrinkage. Masons generally prefer magnesian lime because it works more smoothly and sets more slowly. This latter property permits of a larger batch of mortar being made up and gives the mason plenty of time to spread it. On the other hand, the contractor prefers a quick-slaking lime, so that the job can be finished as soon as possible. The fact that a high-calcium lime gives a larger volume of putty and carries more sand is also of advantage to him.

As to the actual strength of the two mortars, recent tests conducted by the Bureau of Standards indicate that mortars made of dolomitic limes are stronger than those made of high-calcium limes.

Plastering.—Lime to be used for plastering must work smoothly under the trowel, must not "pop" or "pit," and must not undergo too great a change of volume during setting, and, if it is to be used for the finish coat, it must have a good color.

It was noted above, when discussing the properties of the two kinds of lime, that magnesian limes work more smoothly under the trowel and shrink less on setting than high-calcium limes.

Cracking of plaster is in most cases traceable to faulty bracing of the building, settling of foundations or similar causes. Sometimes it is due to the swelling of wood lath which had not been wetted sufficiently before the plaster was applied. In the undercoats of plaster the shrinking of the lime is counteracted by diluting it with sand. In the finishing coat, calcined gypsum is mixed with the lime. This sets before the lime has begun to shrink, and thereby prevents cracking.

The cause of popping or pitting is not very well understood. In some cases it has been attributed to the impurities in the lime, such as clay, iron oxide, silicates, and pyrites. These seem to form various chemical compounds during the burning, which hydrate very slowly and expand during the process. For this reason it is generally conceded that lime to be used for plastering must be more nearly pure than that for any other purpose. Another probable cause of popping is the slow hydration of particles of calcium oxide which have been burned during the slaking. This is one more reason for the preference of magnesium lime for plastering, although extraordinary care must be taken to slake the lime properly, whichever kind is used. Recent experiments lead to the belief that impurities in the sand are frequently responsible for popping.

Magnesian limes are also to be preferred because they are generally more nearly white than high-calcium limes.

On the other hand, a given weight of high-calcium lime yields a larger volume of putty than the same weight of magnesian lime, and hence will cover a larger surface.

The time of setting is an important item, since it regulates the time required between coats. High-calcium limes set more quickly than magnesian limes, but both are rather slower than the contractor would like. It is suggested that some accelerator might be added to the lime to hasten its setting, or an atmosphere of carbon dioxide might be created for the same purpose.

For plastering hydrated lime will generally be found more economical and convenient to use than lump lime. Moreover, it has the important advantage of containing less impurities than the lime from which it was made.

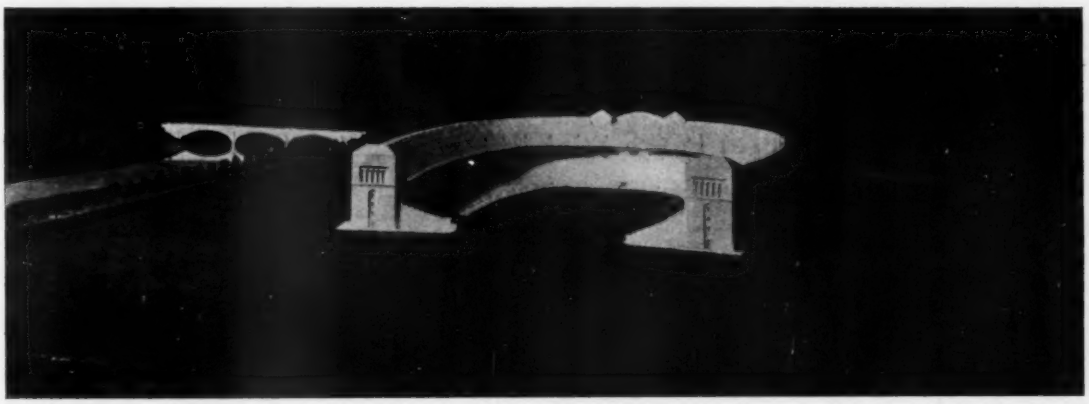
Hydrated Lime and Portland Cement.—For both

building and plastering purposes, hydrated lime may be used interchangeably with quicklime and is often preferred, especially for the final coat in plastering. Hydrated lime is added to Portland cement mortars to make them empervious in water. Quicklime will produce a similar effect, but from the nature of the substance it is obvious that hydrated lime is much more suitable.

The Ohio Stadium

In July and August the AMERICAN ARCHITECT published a report on the present condition of the stadia at four eastern colleges and a discussion of their construction and the effectiveness with which they have met the conditions for which they were built. The data contained in that report formed the basis for much of the study on the Ohio Stadium illustrated herewith.

Funds for the erection of this large structure have been generously given by the alumni, ex-students and friends of the Ohio State University, on whose grounds the structure will be built.



STADIUM FOR OHIO STATE UNIVERSITY, COLUMBUS, OHIO

The Ohio Stadium seats 63,000 people, not counting possible temporary seating. It has three distinctive features. It will be a double deck structure, it will be a true horseshoe shape, with "bowed" sides and one open end, and the space under the lower tier of seats will be used for training quarters, team rooms, showers, lockers, exhibitions, etc.

The structure will be of reinforced concrete and of steel encased in cement. Expansion of monolithic portions will be accommodated by expansion joints every sixty feet about the entire stadium. These expansion joints will be single continuous "butt' joints and will divide the structure into thirtyfour separate units which will have no connection with each other save their footings.

The double deck scheme is a new venture in monumental stadium design. It has been used in an attempt to provide maximum seating with minimum distance from the playing field.

The curved or bowed sides have been used because of the advantages of crowd psychology and the benefits to be derived from the possibility of each spectator being sensible of the presence of the entire crowd those on his own side of the structure as well as those opposite him.

The use of the space under the seats has been suggested as a logical and business-like proposition, making the most possible use of the capital invested in the structure.

The Ohio Stadium has been designed by an organization at the Ohio State University, composed of Joseph N. Bradford, University Architect; Howard Dwight Smith, designer, and William S. Hindman, structural engineer.

Architects and Engineers Co-operate

THE architect and engineer represent two professions whose work is daily bringing them into closer association. Jealousies that may tend to arise should be promptly squelched and should not be permitted to interfere with that friendly co-operation so necessary to the development of the highest efficiency in the art of building. In this connection it might be mentioned that the matter of state licensing laws for architects and engineers has long been held as a cause for friction. Manifestly such laws, to stand, must be fair to both architects and engineers, and any attempt to have laws placed on the statute books, which would interfere with the free exercise of duties by the members of either profession, when they are performing work of a character for which their education and experience qualify them, is indefensable and unjust to both elements.

A commendable spirit has been shown by the technical bodies representative of the two professions—the American Institute of Architects and Engineering Council—in the formation of a Joint Committee on Licensing Engineers and Architects. This committee at a recent meeting, and after an extensive discussion of the whole subject of the registration of architects and engineers, gave unanimous approval to the following resolution:

Whereas, Members of the architectural and engineering and other professions in various sections of the country are urging the enactment of state laws providing for registration or licensing;

Be It Resolved, That the Joint Committee of the American Institute of Architects and Engineering Council is of the opinion that the many points of contact between the architectural and engineering professions make it desirable for them to favor the passage of joint registration laws. In those states in which there already exists a Department of Education and Registration or other similar department, as in the cases of New York, Illinois and Idaho, it is desirable that registration laws should be administered by such state departments with the aid of professional commissions in each profession. Where such state departments do not exist, their formation should be encouraged. A joint registration law for architects and engineers should be designed to protect the title of architect or engineer and to assure the public that a person using that title is properly qualified.

Examinations for registration should in all cases be conducted only by members of the professions affected; that is, for architectural registration the examining board should be composed of architects and for engineering registration, of engineers.

Be It Further Resolved, That no registration or licensing act should deprive any person who, prior to the passage of the act, was engaged in the bona fide practice of his profession, of the right to continue, but he should not be entitled to the use of the title, "Registered Architect" or "Engineer," unless he shall have satisfied the board of his competency and received a certificate of registration; and that any person desiring to begin the practice of architecture or engineering after the act goes into effect shall be required to establish his competency before the board in order to entitle him to the use of the terms "Architect" or "Engineer."

This action, on lines that THE AMERICAN ARCHITECT has for some time advocated is a long step in the right direction. It is gratifying to note that the sober minded and best element in both professions are able to reach a common ground and certain unwise utterances have had no effect toward deferring so desirable a consummation as has been reached.

MEMBERSHIP IN AMERICAN ENGINEERING COUNCIL DISCUSSED

The matter of the American Institute of Architects joining Engineering Council or the new American Engineering Council was also discussed at the meeting previously referred to, and the following resolution was proposed, seconded and unanimously carried:

Whereas, The American Institute of Architects' Committee on Co-operation with Engineering Council recommended to the American Institute of Architects at its convention in Washington, held in May, 1920, the advisability of the institute becoming a member of the Engineering Council and that convention accepted the recommendation of its committee;

Therefore Be It Resolved, That the Joint Committee is of the opinion that the American Institute of Architects should join the American Engineering Council as soon as the institute deems it practicable to do so.

Current News

Happenings and Comments in the Field of Architecture and the Allied Arts

Cheap Houses

Referring to its own needs at the present time, a Providence paper editorially voices the statement that one of the most common of the many suggestions being advanced for the solution of the housing problem is to build cheap houses in quantity to serve the immediate need.

The shortsightedness of this policy ought to be clearly apparent, yet we read of intelligent persons advocating it and saying that public moneys should be voted for the purpose.

To build simply for the present is extravagant. It is not a cure for the housing shortage, but a kind of quack remedy. No city that wants to grow along constructive lines wants to be cluttered with cheap dwellings, which are easier to put up than to have torn down when the need of them has passed. The aim of any forward-looking community is to improve as much as possible each year the soundness and the appearance of its business structures and its homes. No city can build too well or too carefully, with an eye to beauty as well as to utility, if its aim is progress of a stable and enduring quality.

Fuel-Saving Plan Announced

A saving of 30,000,000 tons of coal and $300,000,000 every year would be effected by a linking of the power plants of the Atlantic seaboard, declared W. S. Murray, one of the foremost electrical engineers in the country, in an address before the convention of the American Electric Railway Engineers' Association at Atlantic City.

The speaker explained the idea of the superpower system, the survey of which he has been retained to make by the Government. The zone now under investigation comprises the Atlantic seaboard from Boston to Washington to a depth of 150 miles. In this district, the engineers states that 17,000,000 of horse power were required to turn the wheels of industry and of the railroads. In the introduction of the superpower system the horse power would be cut to 5,000,000, thus saving an enormous amount of fuel and money.

According to the survey, huge steam turbine units, each with a capacity of 300,000 kilowatts, will be established at tidewater and at the mines. To these will be added hydro-electric stations on the Hudson, Delaware and Potomac rivers and other streams of the district. The large efficiency plants in the big cities will be connected with the line. Twenty per cent. of the railroads will be electrified.

At present the stream water power is less at some seasons than at others. To keep power plants going with regularity, it is necessary at these times to use power machines and a force of laborers not required when the maximum periods of supply are available. These involve a fluctuation in labor and a rusting of unused machinery, both of which are burdens and sources of expense. The proposed method of wave motion would be a permanent service needing no such factors. It will be readily seen what a wonderful advance will have been accomplished if this new method becomes possible.

Double Deck Subway Planned

New York City will have a new double decked subway running most of the length of Manhattan Island if the plans proposed by John H. Delaney, transit construction commissioner, to provide for the increase in traffic in the next twenty-five years, are put into effect.

It will be necessary to resort to this double deck subway construction, in the opinion of the commissioner, because the congested section of Manhattan borough has only eleven north and south arteries to serve more than one hundred cross streets.

His plans call for an eight-track double-deck line on the west side of the city from the Battery to 155th street running under Eighth and Amsterdam avenues. Only four tracks would be constructed at first, but these would be so located that another four-track unit could be built under or on top of it.

Mr. Delaney also proposes the building of another north and south subway of four or six tracks under Fifth and Madison avenues, on the east side, and extending from the Battery to the Harlem River. Both these arteries would have connections extending to the Bronx, Brooklyn or Richmond.

The commissioner advocates the construction of forty-two new single track river tunnels. The present system has thirty-four such tunnels.

He says that passenger traffic on the surface of the main arteries, north or south or cross-town, soon will have to be discontinued because of the great increase of traffic, with the result that all passenger traffic on these streets would be forced into subways or on elevated lines.

XUM

Gateway to Carnival Built of Baled Hay

Hay, not marble, was the odd but entirely appropriate material used in the construction of a monumental gateway to the grounds of the farm carnival held recently by the agricultural departments of the state college at Ames, Iowa. The hay was baled, of course, and was piled to form four columns. These were then impaled with long, pointed rods of iron, and were guyed finally with wire to reinforce them against chance shocks and the buffets of the wind.

Replanning Field Columbian Museum in Chicago

The City Plan Committee, Illinois Chapter American Institute of Architects, is taking estimates on the cost of rehabilitating the Field Columbian Museum in Jackson Park, and will report to the South Park Commissioners.

The architects would employ the larger galleries in the building for a permanent exhibit of replicas of the famous architectural designs, frescoes, doorways, sculptures, etc., of Europe. There are many collections in America, but no gallery big enough to display them. A few specimens are shown in the Blackstone room at the Art Institute, but the room is too small and the lighting is poor. The nearest exhibit of the kind is in the Trocadero in Paris.

There would also be room in the museum for a permanent "Own Your Home" exhibit, showing model houses, and for indoor tennis, baseball and golf courses.

Odd Construction Preserves Old Utah Fort

Constructed in a few days, of raw adobe mud and common grain straw, the only available materials at hand in that isolated place more than 54 years ago, the walls of old Fort Deseret, in western Utah, are in a remarkable state of preservation. This is due to the Mormon pioneer builders' unique provisions for effectually weather-proofing the walls, described in a recent article by J. Cecil Alter.

Situated on the low banks of the old Sevier River bed, on a remarkably flat land, the surface of which is within a few inches of the permanent water table in the soil, the walls were rendered immune from rising water through capillarity. A foundation trench, 3 ft. wide and about 1½ ft. deep, was filled to the ground level with loose but carefully laid stones, gathered laboriously far and wide over the Pahvant plains.

Though the soil is a dark, rich adobe, the ground on the immediate site of the fort, a few miles down the river from the town of Deseret, is laden with alkaline salts and generally waterlogged for want of drainage. Excavations, therefore, for the adobe formed moats around the fort. The walls, originally 550 ft. long and 10 ft. high, with convenient portholes and curious bastions in the northeast and southwest corners, have no seams or joints, as they were laid in a continuous structure, though without forms. In the construction, the center of the wall was maintained higher than the edges at all times, and the straw was disposed crosswise, thus aiding in shedding rainwater from the sides and in allowing perfect drainage from the interior of the walls. The height of the wall has been reduced about one foot by settling and erosion, but the top still retains its peaked form and general contour.

The Mormon church authorities advised the construction of the fort during the Black Hawk Indian wars, in 1865, and the farmers dropped their work in mid-July, building the fort in 18 days.

Electrical Houseboat to Educate Chinese

A houseboat containing practically all of the latest electrical labor saving devices which are to be found in American homes will make a tour of the canals and rivers of China this winter. It will be used to bring home to the Oriental estate owners the possibilities of supplying their own power, light and heat by using the same type of farm light plants which have been so universally adopted in the rustic regions of the United States during the past few years.

The boat which is now being rigged out at Shanghai is scheduled to make a trip of about 5,000 miles. Its wares will be shown in a territory populated by more than a hundred million Chinese, most of whom are absolute strangers to anything electrical. It will carry a complete line of household devices, including motor driven sewing machines, vacuum cleaners, irons, washing machines and the labor saving electrical apparatus which American farmers are now using. A staff of expert demonstrators will make the trip and show how easily electricity may be introduced locally by means of the farm light plants despite the absence of electric power companies in China's farming districts.

The tour of the electrical houseboat is interesting because of the educational results which will probably follow it. With the introduction of local lighting plants one of China's greatest handicaps in the way of study and development will be relieved. It is realized that only the wealthier classes will be able to purchase the electrical apparatus, but the great number of retainers on their estates should profit indirectly.

XUM

Automatic Fire Escape Approved

An automatic fire escape was recently demonstrated at New York fire headquarters, when two men lowered themselves from an eight-story window on it. The escape is a rope with a wire running through it and running through an automatic pulley. The rope travels through the pulley at the rate of about four yards a second. It has been tested to bear 1,100 pounds.

Concrete-Slab Bridge, Not Reinforced, Fails

That mere mass is not a substitute for engineering procedure in bridge building is illustrated by the recent failure of a concrete bridge in one of the southern states. The contractor undertook to span a small stream with a structure of solid concrete slabs, supported by three piers resting on the bottom. No reinforcing was used, the slabs instead being made three times the usual thickness. The water soon undermined the piers, and the slabs, unable to support their own excessive weight, to say nothing of bearing traffic, cracked in the middle.

Business Men and the Fire Waste

The Chamber of Commerce of the United States, at its 1920 annual meeting in Atlantic City, adopted resolutions declaring strongly in favor of reduction of the preventable fire waste. The organization includes 1,300 national and local associations, having an aggregate membership of nearly 700,000 business concerns. After declaring against governmental interference with private business, and in favor of Americanism, increased production and thrift, the resolutions made the following declaration on fire prevention:

"At a time when increased production is of the first importance destruction of means of production continues on a great scale. Each year approximately $300,000,000 in property values are being destroyed in the United States through fire. A large part of this value represents waste that can be prevented. Considerations which should appeal to every individual require that, even if conditions were normal, the endeavors which are being made to stop this needless waste, with its detriment to the public interest and its private burden for all citizens, should be redoubled. At a time when economy and conservation of our resources must be paramount, in order that every effort may have its full influence toward increasing production, it becomes the immediate duty of each person, each association, and the whole nation to put an end to preventable waste through fire."

Blast New Canal in Italy to Increase Fish Supply

Three connected lagoons that lie in the Pontine marshes of Italy, between the Roman Campagna and the Mediterranean shore, near Terracina, are remarkable for the great numbers of fish that enter them at high tide. Here they breed and fatten so rapidly that 1,000 to 4,000 pounds are removed every day for the markets, though the only inlet heretofore has been a single channel from Fogliano Lake, at one end of the chain, to the sea. An engineer of American training, noted for his war-time performance of blowing off the top of a mountain and burying hundreds of Austrian soldiers, has now blasted a new canal from the lagoon at the other send, Lake Caprolace, to the Mediterranean. The work required 50 tons of explosive and 1,200 large bombs, laid as a series of mines, or five times the quantity used in the mountain-top exploit, but it was entirely successful, and the added inlet is expected greatly to increase the available supply of food fish, besides aiding in draining those portions of the marshland that lie along its course.

Scientists Will Explore Amazon

A large party of American scientists next January will explore about 1,000 miles of almost unknown territory in the Amazon basin along eastern Ecuador and Peru, it was announced at Columbia University. Among members of the expedition, which will take an entire year, will be Henry H. Rusby, dean of Columbia school of pharmacy, who will head the party; Dr. David Starr Jordan, president of Leland Stanford University, who with Dr. Carl H. Eigenmann, dean of the University of Indiana, will study fishes and reptiles; Dr. F. E. Kremers, University of Wisconsin, an authority on Volatile oils; Prof. Gill, Boston Institute of Technology; Dr. Ruthvan, University of Michigan and many zoologists from the American Museum of Natural History.

Powder Depot on Sandy Hook Hidden by Camouflage

As they read of the wonders wrought by the camoufleur along European battle fronts, few inhabitants of New York City realize that a monumental job of this kind now ornaments the sands of Sandy Hook, across the Lower Bay. Here, early in the year 1918, was established a storage depot for high explosives, consisting of numerous isolated magazines. These were strung along the coast for a mile and a half. As the big sheds were covered with white corrugated asbestos, and as all surrounding vegetation was removed to lessen fire risk, they became easily visible

for many miles at sea. This condition was allowed to exist until German submarines extended their activities to our eastern coast. Then a camoufleur was dispatched from Washington. Having learned from a voyage of inspection along the shore that cedar trees dominated the background of all the magazines, this expert ordered that each be painted in harmony. Accordingly the walls were daubed with green and yellow, the first for the trees and the second for sand. To break the rectangular outlines of the structure the painted "clumps" were extended above and to the right and left by means of cut-out metal silhouettes. As a result of this treatment the magazines are practically invisible at half a mile or so from shore.

More Motor Trucks for Street Cleaning

The city of New York ordered 212 5-ton dumping trucks for use by the Street Cleaning Department. It is the largest single order for motor equipment ever placed by a municipality. The trucks will be used for all phases of street cleaning work, including the removal of ashes, garbage and snow.

Seventy-five of the trucks will be equipped with removable bodies and may be readily converted into flushers and sprinklers by the substitution of 1,200-gallon tanks to replace the dump bodies.

The contract price for the entire order of heavy-duty trucks, including "Studebaker Model" flushing equipment for 75 of the machines, amounts to the sum of $1,422,190.55.

New York City spends millions of dollars annually for street cleaning work, and the action of its officials in providing the Street Cleaning Department with a huge fleet of trucks, it is estimated by the city's engineers, will save the municipality large sums of money each year, and—what is of equal importance—will give the city ample protection against the blocking of thoroughfares by heavy snowfalls. The plan adopted by New York for keeping its streets clean will be watched with interest by cities throughout the country.

Band Stand to Be Erected in City's Heart

The City Hall terminus of the Parkway, which runs thence to Fairmount Park, a mile away, is soon to be the site of an improvement unique in the history of Philadelphia, Pa. This area, contiguous to the City Hall, and bounded by 15th, Arch, Broad and Filbert streets, is to be traversed by a boulevard link, or short cut, that will disentangle the daily traffic snarl at the corner of the two streets last named. Decorated then with sod, shrubs, and trees, the resulting areas will become green garden spots, with greenness accentuated by their location in the heart of the city's busines district. On the larger area, finally, will be placed a band stand and permanent benches, that the concerts formerly given in the City Hall Plaza may be enjoyed in the future by larger audiences and in greater quiet.

Famous Hancock House Still Stands

The first house of distinction to be built on Beacon Hill, in Boston, the highest of three elevations which gave to the city the name of "Tri-mountain," and which was the center of military, social and religious life, was erected by Thomas Hancock, an uncle of the Revolutionary hero. This was in 1737.

It was a beautiful mansion, built of stone, with the ground laid out in orchards and gardens, and it was here that the first tree nursery in Boston was started. Inside considerable taste was shown in the furnishings, the drawing-room containing a rare set of bird's eye maple, covered with red damask.

Hancock was a lavish host, and gave a famous breakfast to the officers of the French fleet.

While the French troops were in Boston forty or more of the officers dined at the house every day. On one occasion, however, so many unexpected guests appeared that Madam Hancock was driven to despair to know how to provide for them; so she had servants milk all the cows pastured on the common, whether this was agreeable to their owners or not. The house is yet considered a splendid piece of architecture.

Plan to Construct European Hotels in China and Japan

Announcement is made in the "North China Daily News" of the plan to establish a chain of hotels to accommodate Europeans in the Orient, starting at Shanghai with the erection of a 700-room modern building costing about $3,000,000, to be followed by hotels in Yokohama, Peking, Hongkong, Hankow and other principal cities frequented by Europeans. Of Shanghai's population. 2,000,000 are Chinese and 30,000 Europeans, and the city is growing rapidly as trade develops.

Glacier Park Highway Will Cross Continental Divide

Straight across the continental divide, the government has started to hew from the native rock of Glacier National Park, Mont., what is destined to become one of the most picturesque highways in the world. This 38-mile stretch of hard roadway will lift the motorist to an altitude of 9,000 feet at the crest of the Rockies by the most gradual rise possible. For the greater part the grade will average only six

per cent., though an occasional stretch will reach the eight per cent. to which the engineers have been restricted. The new highway is to connect with the existing 30-mile highway in the eastern part of the park, to make possible an uninterrupted tour of 68 miles over hard, smooth roads. This journey will carry the motorist from the main gateway of the park on the east side of the continental divide to the town of Belton, on the west.

Business Men's Art Club

Chicago has a Business Men's Art Club. On two evenings a week instruction in drawing and painting is given at the Art Institute, and on Saturday and Sunday afternoons there are classes in outdoor sketching. Among the teachers are several professional artists. It is planned to hold annual exhibitions. The prospectus says: "This club is composed of business men who art studying art as an avocation or hobby. The object of the club is to encourage the study and practice of painting and kindred arts among its members and to co-operate with societies now aiming to broaden the appreciation of art in our city and elsewhere. Our club brings together men of middle age who desire to learn to paint, men who love nature and enjoy a recreation which challenges their best intellectual effort and gives them a means for self-expression." There are already about sixty members.

Paris Once More a Glitter of Lights

Once more Paris is making an attempt to look after dark like it did before the war, states a cable to the New York Times. Suddenly, one evening, 14,000 extra gas street lamps were lighted up, and the next day full sunlight electricians rehearsed with electric standards along the boulevards.

Enough German coal, it appears, has been stored in the city's yards to justify the measure, and the almost complete darkness in which the city has been wrapped at night since February is now to be ended.

At that time, rather suddenly, it was discovered that the winter stocks of coal had been prematurely exhausted, and the reduction of lighting became again almost as severe as it had been during the time of the Gotha raids. All night signs were suppressed and the number of street lamps reduced to the barest necessity.

This month, thanks to the increased output from French mines and to the delivery of coal by the Germans in accordance with the Spa agreement, stocks are nearly the normal of before the war, and the card ration to householders has been increased to a quantity almost sufficient to keep every one warm throughout the winter.

Still, there is the prospect of an English coal strike looming ahead, and as this is the third time the streets have been lighted up since the armistice, Parisians are not very optimistic that it will last.

Eight Desks Combined in One by College Professor

Needing several desks to carry on his diversified work, but finding his office too small to accommodate them, a college professor in charge of an astronomical observatory on a West Indian island, devised a space-saving piece of furniture that permits him to labor at eight different desks without leaving his chair. The desks are supported by a ball-bearing pedestal, around which they revolve, and can be drawn into position with slight effort. In the center are shelves for books and supplies.

Timber from Dead Trees

The prejudice held by certain builders against the use of lumber from fire or insect-killed trees has been proved groundless by recent experiments of the forest products laboratory. Here it has been found that lumber cut from sound dead trees is in no way distinguishable from any other, except that it may be partly seasoned. If the wood has not been injured subsequently by decay or further insect attack, this "dead" lumber is the equal of "live" of the same grade for all structural purposes.

Elaborately Carved Human Interest Sign-Posts

Even in their sign-posts the Germans display their love of elaborateness. Instead of having plain wooden or metal posts with arrows pointing to the various towns, highly carved tree-stumps are used. They are fashioned to represent human beings with extended arms—the arms pointing to the various towns, and having the distances written on them.

Some of the sign-posts smile at you; others frown. Perhaps they are trying to tell you the kind of road that's ahead.

A cheerful sign-post shows a schoolboy hugging to his bosom his slate on which is written the name of the next town. He smiles at you sweetly and points toward the town, regardless of the fact that pointing is considered bad manners. The stump on which he dwells is a tall one and makes you think, at first, that the boy is wearing long dresses. These mileposts are only one of the many curious things that travelers through Europe are continually seeing.

Weekly Review of the Construction Field

With Reports of Special Correspondents in Prominent Regional Centers

THE evidence that readjustment of prices and business conditions in domestic industries are steadily continuing is everywhere apparent. In fact in some classes of goods the charges at the mills are not so very far above prewar prices. The unfortunate condition in the price question is that consumers will not probably get the benefit for a considerable length of time of these changes in prices that are being everywhere made by producers or wholesalers. Naturally such a condition tends to retard the readjustment in certain lines and also prevents consumers from absorbing goods in the market as they would most certainly do if they could receive the benefit of reductions that were properly due them. There is nothing in such conditions to stabilize business and in fact the inability of the ultimate consumer to realize any part of relief which a cut on the part of producers would ordinarily entail tends to a curtailment of buying demand with the natural reflected effects on earnings. Further thus far no very serious effects are to be noted and if the gradual restoration of normality that is predicted takes place, much of the present depression it is believed will be relieved.

The situation in the building industries shows but little relief especially in the all important question of housing. The post-war conditions that have brought about the serious retardation in our building operations and have created conditions particularly in the field of housing that are now nearing an acute stage are not confined solely to this country and in fact every belligerent in the great war is passing through an experience very similar to our own. Attempts to solve Great Britain's housing problem, it is learned from a recent bulletin of the Guaranty Trust Company of New York, have already brought forward upwards of 10,000 schemes involving an annual capital expenditure of $600,000,000, according to a report by a representative of the Foreign Trade Bureau of that organization. After giving details as to various plans and the number of houses to be built in each of more than thirty cities visited the report says:

"The program of the Ministry of Health—complete rehousing in three years—is about one year behind, and is costing more than double the original estimates.

"The Ministry of Health works in conjunction with the Office of Works. Where a local authority defaults, the business is then entrusted to the Office of Works.

"What is keeping back housing at the present time is the fact that there are not enough skilled men to do even a quarter of the work wanted. The Trades Unions will not allow the number to be increased from the outside. The Government is using a sort of indirect compulsion by prohibiting 'luxury and unessential building,' so that if a man will not build cottages he is not allowed to build anything else. There are various suggestions for speeding up the work, including a guarantee to the Trades Unions of employment for a term of years to men employed on housing work, to ensure them against loss of time in bad weather by a minimum wage 'wet or dry.' In return the Trades Unions will be asked to consent to dilution and the employment of unskilled and semi-skilled labor, to give up their apprenticeship rules, and abandon all opposition to the employment of ex-service men, trained or untrained. There are 'luxury building' tribunals to hear appeals against decisions prohibiting buildings regarded as non-essential.

"There are housing bond campaigns all over the country. In London, subscriptions to the 6 per cent. bonds are coming in at the rate of about £100,000 a day. While the local governments are issuing 6 per cent. bonds, the British Government charges 7 per cent. Borrowing in the ordinary way for housing schemes not financed by bonds is usually 7 per cent.

The total number of housing schemes in England and Wales number 10,673, covering in all land for 800,000 houses. Of these 7,120 have been approved with an area for 550,000 houses. In Scotland 103,-000 houses have been authorized, the bids averaging about £1,000 per house. This is roughly about £100-£150 more than it costs per house in England."

UNDOUBTEDLY a very serious condition is threatened in the production of coal in this country during the next six months unless some working agreement that has stability and indication of continuance can be effected. England's experience in the matter of a threatened coal strike has now become history and while the government has in a sense come to terms with the miners there are yet the mutterings of discontent and it is by no means certain that the matter may not become eventually reopened again to cause a mutiny among the manufacturers of Great Britain. While fortunately things are in better condition in this country we are nevertheless always and especially at this time of the year threatened with a menace of complications in the coal fields and it would seem a wise precaution that

we should follow the example of the British government that has begun an investigation of water resources of the United Kingdom to determine how far "white coal" may be relied on to supplement the nation's coal resources. In its weekly bulletin of foreign information the Bankers Trust Company of New York states that special committees appointed by the British Board of Trade and the Privy Council are at work on the investigation of water power.

Furthermore, an official Water Power Resources Committee has already examined and reported favorably upon nine separate schemes of water power development in the Scottish Highlands. These nine schemes, it is estimated, would yield an aggregate of 183,500 horsepower at a cost much below the present cost of generating power in Scotland by the use of coal.

The Committee has recommended the appointment of Water Commissioners under control of the Board of Trade, to insure that British water resources shall be properly conserved and that all interested parties shall be treated fairly under future development schemes. It is proposed to divide England and Wales into water power districts, according to the conformation of water shed areas, under local committees whose duty shall be to secure the best development and use of the water power resources of the individual districts.

THE proceedings of the American Bankers Convention in Washington, D. C., have attracted much attention on the part of the construction industries. Regret has been expressed in many quarters that the bankers did not more specifically outline their exact position on the subject of financing of building projects. Referring to this subject the American Contractor states:

They are not earnestly studying ways and means of meeting the construction situation as they are studying ways and means of financing foreign business, for example, or the handling of trade acceptances.

This may not be an unmixed evil, for it is inevitable, if bankers do not interest themselves in providing building finance, that methods of financing will be devised and this independent of the banks. People are going to have homes and when the pressure becomes so strong that they are forced to act they will find a way to provide the finance. Congressman Kelly of Pennsylvania, according to press reports, will introduce a bill in the next Congress proposing to divert the funds in the Federal Postal Savings Banks to building loans and it is not impossible, by any means, for home building corporations to be formed for the sale of bonds of small denomination through which popular savings can be accumulated and the bond purchasers benefit through a rate of interest higher than is now paid by the savings banks of the country. While legislation always is a questionable palliative, when the public once is convinced that bankers do not propose to meet the building finance situation, we may expect state and national legislation that will have something to say about the investment of long-term deposits in building mortgages by savings banks. The vulnerable point in the banker's case is the fact that he does business on other people's money and when the "other people" become convinced that the banker is not doing a reasonable share in meeting national problems, other people's money will find a way to devote itself to the other people's interests.

THE Chicago correspondent of THE AMERICAN ARCHITECT reports that residential builders are being urged to build now, while the prices are comparatively low, stocks good, and labor plentiful.

While this is no doubt timely advice, buyers cannot be expected to act upon it in the face of a falling market, and no increase may be looked for in this line of building until people are convinced that prices will go no lower.

Prices in some lines have already reached rock bottom, according to the dealers, and any change will be in the nature of an advance. In other lines reductions below manufacturers costs may occur but this will be only a temporary condition and the enormous demand looked for in the spring for all kinds of construction material is likely to send prices soaring and accumulated stocks flying.

It is predicted that spring will see brick, lumber and cement in the advancing market. Just now prices on sand, stone and gravel are steady. The lumber market is dull, especially in the lath and shingle market, red cedar shingles Chi. basis for clears at $4.81, stars $3.97; demand for lath is very poor with No. 1 fir at $9 Chi., bas No. 2 fir $7.50, No. 1 spruce at $10, No. 2 spruce $6.50, No. 1 pine $11.50, No. 2 at $9.50.

(By Special Correspondence to The American Architect)

Boston.—The business interests in New England are steadily undergoing a process of readjustment to a lower commodity price basis with all that means in the way of financial embarrassment as one manufacturer after another abandons the rosy dreams of huge profits and reconcile themselves to the absorption of what may become substantial losses. Textile manufacturers in Lowell, Fall River, Worcester, New Bedford and other centers are facing the alternatives of closing their plants entirely, running on a part time schedule or requesting their employees to

accept reductions in wages, as the result of a situation brought about by heavy cancellation of orders and unstable market conditions. Mill owners are attempting to adopt a policy of reduction in order to keep their plants in motion and in many instances are meeting with the heartiest co-operation from the operatives In other cases, employees state that they cannot stand a cut in wages and maintain a decent standard of living. The latter intend to fight against any suggestion of the owners that their pay be reduced. The general reason for the reduction of a complete shutdown is that the mills have few orders to fill. Sixteen new concerns were chartered in Connecticut this past week, including two for $500,000.

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Seattle.—With every office building in the city, modern and otherwise filled and waiting lists for space in all of desirable value, the office equipment of this city is three years behind. Protests of investors, such as the Metropolitan Building Company (Stone-Webster) have for two years been against the low rental revenues, claiming that if floor space could be lifted to the San Francisco basic of $3 per square foot per annum it would be possible to expect relief. This company still holds considerable valuable leased space in the new upper business and shopping district of the city that is suitable for the erection of Class A office structures and it is reported that some plans are now being considered for building in 1921.

Home building will be heavy. Lumber has fallen to the point where a bill for a five room bungalow, for instance, is $300 to $400 less than on May 1. War-standard structures, built to sell, are being offered freely, but shrewd investors are reviewing the cheap construction so well known at that time and are preferring to construct anew.

There will be no new building projects or contracts in the Pacific Coast territory, barring the summer climate districts of California this year. After election stock taking will keep off any buying until January 1, when, if agricultural products yield a living profit to farmers, one of the most gratifying construction years in a decade will be inaugurated on the Pacific Coast. Architects furnish proof of this in conditional big jobs now beyond the pencil-sketch stage. Eastern lumber buyers, who represent the building trade most closely so far as lumber is concerned, report that they will not be on the market until December. Lumber ordered in that month will not reach Eastern buyers in time to interfere with the balancing of accounts for 1920, and already sufficient proof has accumulated in the hands of fir lumber manufacturers to warrant expectation for an unusually brisk month in December. Further evidence of expected lumber market recovery based solely on the Eastern building demand is in the fact that the larger mills are refusing to accept orders on today's market and that wholesalers are declining to sell short, fearing sharp and sudden recovery.

The pipe and nail situation, distribution and arrival standpoint has improved. Several of the larger jobbers state their ability to deliver a normal amount of small pipe, while the smaller houses deny that there are any three-quarters or halves in galvanized in the territory. The undeniable fact is that the mills are rapidly catching up on back orders, and are keenly anxious to make it clear to the Coast jobbing territory that they hope to be at normal by January 1.

The condition as to small nails, which has been abnormally acute for six months, has been greatly eased during the past week and rationing has stopped, although arrivals are quickly swallowed up into the avenues of construction. Three-penny blues are still scarce, but 6 and 8 penny common are coming quite freely, at least in so far as Colorado shipments are concerned. Increased efficiency and production at the mills as developed at this end of the line is the basis on which jobbers hope to be catapulted into normal conditions early in the spring. Water shipments of steel pipe have overcome the handicap of irregular car distribution, and 60 days to Coast points from the mill is of common occurrence. Owing to the fact that 38 vessels are now in the coastwise water trade, future delivery from Pittsburgh is assured. Jobbers announce confidently that they will be able to take care of any demand for nails after January 1.

Jobbers of fire clay and brick have stopped shipments, warehouses now carrying normal stocks. Roofing, plaster board and brick of all kinds are plentiful. More plaster is coming but the supply is under the demand. There is very little improvement in the arrivals of cement.

Shingles are stronger, with 60 per cent. of the mills closed down for lack of orders. Wholesale prices for clears are $3.15 to $3.25 and stars $2.75 to $2.80.

The fir lumber market is believed to be at bottom at $54 to $59 for 1 x 4 No 2 vertical grain flooring, $37.50 to $48 for five-eights by four No. 2 and better ceiling and $18.50 to $21.50 for 2 x 4, 12-14, No. 1 stock surfaced and edged dimension, basis prices at the mill.